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Late Woodland to Early Mississippian Period Subsistence in Coastal Georgia: Animal Remains from Taylor Fish Camp (9GN12), St. Simons Island

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LATE WOODLAND TO EARLY MISSISSIPPIAN PERIOD SUBSISTENCE IN COASTAL GEORGIA: ANIMAL REMAINS FROM TAYLOR FISH CAMP (9GN12), ST. SIMONS ISLAND

by

THOMAS SCOTT CLARK

(Under the Direction of J. Matthew Compton)

ABSTRACT

This study investigates subsistence strategies used by Native Americans living on the Georgia coast during the transition from the Late Woodland to Early Mississippian period (ca. AD 700 – 1100). Comparatively little subsistence data are available from the time frame on the southern Atlantic coast. Previous studies have focused mainly on archaeological sites representing preceding or subsequent time periods, and few studies of animal-use at coastal sites have used fine-screening methods. Taylor Fish Camp (9GN12) is a multicomponent and poorly-understood site located inside Cannon's Point Preserve on St. Simons Island, where previous investigations indicate a Late Woodland to Early Mississippian period occupation. This paper presents the analysis and interpretation of invertebrate and vertebrate remains recovered during an excavation designed for this study using 1/16-in screens, and vertebrate remains recovered from the site during two past projects using 1/4-in screens. This study also summarizes all previous archaeological projects which took place at Taylor Fish Camp and presents the results of radiocarbon testing of samples collected during three excavations.

Results of the faunal analysis indicate inhabitants interacted with their environment in similar ways as prehistoric residents of other coastal sites in the region, focusing their subsistence strategy on shellfish and fishes available in creeks and marshes. Stout tagelus, eastern oyster, ribbed mussel, turtles, sea catfishes, mullets, drums, and killifishes were regular contributors to the diet. Terrestrial resources such as white-tailed deer provided meat but to a lesser extent. Zooarchaeological evidence suggests inhabitants regularly exploited nearby estuaries, during multiple seasons, and probably employed mass-capture fishing technologies

such as nets or traps. The use of 1/16-in screens revealed heavy use of killifishes and fingerling mullets available for capture in shallow waters with hand-held nets, a subsistence strategy largely unnoticed if larger archaeological screens were used. Comparison with animal remains from nearby prehistoric sites indicates only slight differences in subsistence practices related to location. The faunal evidence, density and extent of midden refuse, pit and structural features, ceramic types, and radiocarbon dates, indicate a substantial multi-seasonal occupation of Taylor Fish Camp from the Late Woodland to Middle Mississippian period.

INDEX WORDS: Zooarchaeology, Woodland period, Mississippian period, Prehistoric subsistence, Coastal Georgia archaeology, Native American fishing, Shell midden

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by

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CHAPTER 1
INTRODUCTION

This study examines subsistence practices in coastal Georgia during the Late Woodland/Early Mississippian period (ca. AD 700 – 1200) through analysis and interpretation of animal remains recovered from Taylor Fish Camp (9GN12) on St. Simons Island, Georgia. Comparatively little subsistence data representing the time frame is available from the region. Faunal remains collected from Taylor Fish Camp present an excellent opportunity to investigate animal-use strategies and settlement systems used during the shift from the Woodland (ca. 1000 BC – AD 1000) to the Mississippian period (ca. A.D. 1000 – 1600), an under-studied transitional period on Georgia's coast. A fine-screened faunal sample recovered from a Late Woodland/Early Mississippian period site will help to fill an important gap, providing a step toward building a regional sequence of coastal, prehistoric subsistence, allowing archaeologists to investigate the variety of local adaptations to a seemingly resilient subsistence base available in coastal estuaries (Reitz et al. 2009, Reitz 2014).

Taylor Fish Camp is a multi-component site near the northern end of St. Simons Island, Georgia, located on the southeastern shoreline of Cannon's Point Preserve, an approximately 600-acre peninsula with a dense concentration of prehistoric and historic archaeological resources. Numerous archaeological projects at multiple sites have shown that Cannon's Point peninsula was heavily occupied since the Late Archaic period (ca. 4000 – 1000 BC). Fine-screened and adequately-sized faunal samples have only been analyzed from Late Archaic and Historic period contexts. To further understand the intervening millennia of occupation on the peninsula, and the variety of ways its inhabitants interacted with the environment, analysis of the animal resources which attracted prehistoric people is essential.

Several archaeological projects at Taylor Fish Camp have revealed that the heaviest occupation at the site probably occurred from the Late Woodland (ca. AD 500 – 1000) to Middle Mississippian (ca. AD 1200 – 1400) period. The faunal remains analyzed for this study were deposited from approximately the eighth to the twelfth century AD, referred to here as Late Woodland/Early Mississippian period, as the temporal boundaries between those cultural periods are unclear along the coast. The primary purpose of this project is to examine subsistence practices during the period by using zooarchaeological methods to analyze faunal remains recovered from past excavations and from an excavation designed for the current study.

Invertebrate and vertebrate remains identified will provide insight into coastal life: which animals were targeted and their relative contribution to diet, what habitats were exploited, probable seasons of capture, and potential methods used for capture.

Results from this study will be compared with faunal assemblages recovered from Georgia's coast, to further document stability and change in prehistoric subsistence practices between time periods and among roughly contemporaneous sites. Emphasis is placed on prehistoric use of the Altamaha River mouth, as zooarchaeological studies have taken place at other sites in the area. A Middle/Late Woodland period site on the upper estuary (Reitz and Quitmeyer 1988), and an Early Mississippian site on the lower estuary (Crook 2005; Weinand et al. 2000) have produced comparable data. A study of Late Woodland/Early Mississippian occupation at Cannon's Point (Martinez 1975) recovered small faunal samples from multiple locations on the peninsula. These studies provide an opportunity to compare the selection of animal resources by groups living in similar environments. Results will also be compared with the subsistence practices of Late Archaic period residents of the same peninsula (Marrinan 1975, 2010), to investigate long-term usage of a continually occupied location. This study also includes a summary of all the projects completed at Taylor Fish Camp, to better define prehistoric settlement at the location, as the previous archaeological work at the site has yet to be synthesized.

Coastal Subsistence Studies

Subsistence strategies are the means by which people regularly acquire food and other essentials; they significantly affect, and are affected by, many other forms of human behavior, including locations chosen for residence, mobility, population size, interaction between communities, socio-economic organization, and belief systems (Reitz and Wing 2008:28, 251; Thompson and Worth 2011). Subsistence studies are key to understanding prehistoric life, offering insight that may not be available from traditional analytical approaches in archaeology such as lithic, ceramic, or settlement pattern analysis (Parsons and Marrinan 2013). Subsistence strategies require decisions about what animals to consume, where and when to pursue them, and what technologies are best for capturing them. The zooarchaeological record can reveal resources which attracted coastal residents, and can reflect cultural and environmental settings that affected how people utilized those resources.

Historically, archaeologists emphasized the importance of terrestrial resources to Native American groups and viewed aquatic resources as less valuable, even marginal or inferior (Alvarez et al. 2011; Erlandson 2001; Orr 2007; Reitz 1988; Walker 2000). It was assumed that aquatic resources were "low prestige" and only used in response to population pressure on inland communities (Reitz 1988). Aquatic resources could not provide enough energy to support sedentism and social complexity, or must have been secondary to horticultural foods, it was presumed (Reitz 1988). Zooarchaeological studies from recent decades, especially those utilizing materials collected with fine-mesh screens, have successfully challenged these positions, demonstrating the long-standing productivity and importance of marine resources to prehistoric inhabitants of the southern Atlantic Coast (Parsons and Marrinan 2013; Reitz 1982, 1988, 2014; Reitz et al. 2009; Reitz and Quitmeyer 1988).

The importance of using fine-mesh screens while excavating coastal sites has been discussed at length (e.g. Grayson 1984; James 1997; Nagaoka 2003; Quitmeyer 2004; Reitz and Wing 2008; Shaffer and Sanchez 1994; Wing and Quitmeyer 1985). Faunal assemblages collected using coarse-mesh screens are less likely to represent the contents of midden deposits and can bias results of coastal subsistence studies. This is largely due to the inability of coarse-mesh screens to capture small-sized and fragile remains, especially those of small-bodied fishes. Excavating without fine-mesh screens may lead to overemphasis of larger animals whose remains are more visible, such as white-tailed deer (*Odocoileus virginianus*). Fine screening, though time-consuming in the field and subsequent analyses of materials in a laboratory, allows for a more complete representation of animal-use and more accurate interpretations of coastal subsistence.

Studies of fine-screened faunal remains indicate that fishing and shellfish collecting, especially in areas immediately adjacent to sites, was a major focus of prehistoric lifeways on Georgia's coast (e.g. Bergh 2012; Fradkin 2016; Palmiotto 2011; Parsons and Marrinan 2013; Reitz 1982, 1988, 2014; Reitz and Quitmeyer 1988; Thompson and Worth 2011). However, most of the data we rely on to make these interpretations have been recovered from Late Archaic, Middle Mississippian, or Late Mississippian period (ca. AD 1400 – 1600) contexts. Analyses of faunal remains recovered from the intervening Woodland period on the Georgia coast are uncommon, and are rare from sites occupied during the shift from the Late Woodland

to Early Mississippian period. Taylor Fish Camp provides an opportunity to examine varied use of estuarine resources during the transitional period.

Coastal estuaries are productive environments where freshwater meets saltwater, providing nurseries for a variety of fish and invertebrate resources. Some species are more readily available in localized habitats, as a result of preferences for certain characteristics such as salinity level, temperature, water depth, and bottom type. Diet of humans living on the coast may be related to selection of resources according to location, therefore leading to differences in animal remains recovered from a site. Cultural influence can also affect subsistence strategies used by a prehistoric community, resulting in a less-diverse faunal assemblage at an archaeological site. A preference for a specific type of fish, for example, may have led to the creation of a selective, large-scale fishing method, requiring group labor and cooperation, and capable of capturing large amounts of the target species. Byrd (1996) suggests that advanced fishing technologies such as this, which consistently catch specific species of larger sizes, may be directly correlated with larger, more sedentary, and culturally-complex prehistoric communities at coastal southeastern sites.

Seasonality and mobility have been a central focus of understanding coastal adaptations in the region (Parsons and Marrinan 2013; Reitz et al. 2012; Thompson and Worth 2011). Site location, time of year, and the duration of time a group of people occupied an area are directly related to available resources. Techniques such as growth-band analysis of shellfish and geochemical analyses of catfish otoliths can indicate season of collection, which allows season of occupation to be inferred (e.g. Keene 2004; Reitz et al. 2012). A few animals, such as migratory birds, sturgeon (*Acipenser* sp.), sea turtles (Chelonidae), and some species of herrings and shad (Clupeidae), are highly seasonal and only available on the coast for a short period. Most species found on Georgia's coast are available year-round, but many are more readily available in particular habitats according to age and season. As a result, the presence and sizes of some species in a faunal assemblage suggest the season of capture, adding valuable evidence for seasons of occupation at that location. Studies have shown that multi-seasonal or sedentary occupations were likely at most sites along Georgia's coast since the Late Archaic period (e.g. Keene 2004; Marrinan 1975; Reitz and Quitmeyer 1988), but limited evidence of animal use and seasonality is available for the Woodland period (Reitz et al. 2012; Thompson and Worth 2011).

The Late Woodland period is less-understood than the periods it precedes and follows. The Woodland period in the Southeast, in general, is defined by the widespread use of pottery, monumental earthworks, distinct burial practices, increased ceremonialism, and long-distance exchange of goods, but these cultural characteristics begin to become less pronounced in the archaeological record during the Late Woodland period (Anderson and Mainfort 2002; Nassaney and Cobb 1991). These defining characteristics of the Woodland period are mainly found among inland groups. The period is also associated with a gradual and uneven shift toward horticultural practices, but evidence for intensive use of domesticated plants at coastal sites is currently lacking (Anderson 1998; Ashley et al. 2007; Keene 2004; Reitz 2014). Woodland period residents of the coast probably remained focused on hunting, fishing, and collecting locally available plant and animal resources (Anderson 1988; Ashley et al. 2007; Reitz 1988, 2014).

The Mississippian period in the Southeast is defined by the rise of powerful chiefdoms, complex societies with a social hierarchy, larger populations, and a dependence on crop production. Similar to the Woodland period, these cultural characteristics are more common at inland sites. Many Mississippian groups continued to hunt, fish, and collect wild foods, but evidence for crop production appears at many inland locations throughout the region. On the coast, reliable evidence for plant cultivation does not appear until the Late Mississippian period (Bense 1994:185-186; Keene 2004; Larsen 2002; Larson 1980:184-220; Reitz 1988; Thomas 2008a:22-25, 198-210). Analysis of fine-screened faunal materials recovered from Mississippian period sites on Georgia's coast reveal a continued focus on estuarine resources (e.g. Bergh 2012; Reitz 1984). From currently available evidence, albeit limited, it appears that Woodland and Mississippian period inhabitants of the coast exploited their environment in similar ways. A fine-screened faunal assemblage from Taylor Fish Camp will shed light on coastal subsistence practices and lifeways during the regional shift from the Late Woodland to the emergent Mississippian period.

Research Design

This study has three objectives. The first is to reconstruct the animal-use strategies used by terminal Late Woodland period inhabitants of Taylor Fish Camp. This is accomplished by excavating a sample of shell midden deposits known to contain ceramic types associated with the period, using 1/16-in (1.59 cm) screens to ensure that small animal remains are given an equal

chance of recovery. Identified invertebrate and vertebrate remains will be used to infer which animals were targeted and their relative contribution to diet, where the animals were likely captured, what time of the year the animals were collected or captured, and technologies likely used for procurement. Two samples of vertebrate remains recovered from Late Woodland period contexts at the site during previous excavations using 1/4-in (6.35 cm) screens are also analyzed and included in the study. Additionally, several small samples recovered from nearby, contemporaneous deposits on Cannon's Point peninsula using 1/8-in (3.18 mm) screens were analyzed for a previous study (Martinez 1975). Those results are included in a discussion of terminal Late Woodland period animal use, subsistence, and settlement of the peninsula.

The second objective is to compare results from Taylor Fish Camp to faunal assemblages from other prehistoric sites on Georgia's coast to investigate similarities and differences in subsistence strategies through time and space. It is expected that Late Woodland/Early Mississippian period occupants of Taylor Fish Camp followed the coastal pattern of focusing on marine resources, but with possible variation related to localized environmental or cultural differences. It is hypothesized that small fishes common to prehistoric assemblages, and small fishes uncommon to prehistoric assemblages, will be recovered in higher numbers as a result of using 1/16-in screens. Chances for recovering fishes which prefer low salinity or freshwater should also be higher due to the site's location near the mouth of the Altamaha River. Results will also be compared with a fine-screened assemblage recovered from two Late Archaic period shell rings on Cannon's Point (Marrinan 1975, 2010), approximately 1.6 km (1 mile) northeast of Taylor Fish Camp, to examine stability and change in subsistence practices used by Native Americans who occupied the same peninsula but were separated by millennia. This could suggest environmental differences which led to changes in available animal resources, cultural and social factors which influenced resource selection, or differences in assemblages related to archaeological methods.

The third objective is to better describe the prehistoric occupation of Taylor Fish Camp. This will be accomplished by interpreting the features and midden contents encountered during the current study, and by presenting the results of radiocarbon dating from three excavations at the site. In addition, I summarize the previous twelve archaeological projects which encountered prehistoric materials and tally all the identified prehistoric ceramic types recovered during those projects. Previous projects were guided by research questions relating to historic occupation or

limited in scope. Some were salvage-style efforts and collected only surface materials, collected artifacts which have yet to be analyzed, or have yet to produce a final report. The valuable prehistoric evidence collected during those projects has yet to be synthesized and will guide future research at the unique location.

The prehistoric components of Taylor Fish Camp are poorly understood and unbounded, but the site is known to contain a shell midden approximately 400 m (1/4 mile) long, several discrete shell-deposits, numerous archaeological features, burials, and artifacts representing every prehistoric subperiod since the Late Archaic. This complex site will not be defined by the current study, but by meeting these three objectives, Native American subsistence and settlement during an under-studied period will become more clear. This will also better inform future researchers, current landowners, and Cannon's Point Preserve's weekly visitors, of the significant archaeological value present at Taylor Fish Camp.

Thesis Outline

Chapters 2 and 3 place Taylor Fish Camp in its cultural and natural context. Chapter 2 discusses the prehistoric chronology of the region, with emphasis on the Late Archaic, Late Woodland and Mississippian period along the southeastern Atlantic coast. Previous zooarchaeological analyses and coastal subsistence practices will be highlighted, along with brief outlines of site types, settlement patterns, and diagnostic artifact types, particularly ceramics. Additional attention is paid to the numerous sites found on Cannon's Point peninsula. Chapter 3 describes the physical environment of the site, with an emphasis on the available animal resources. All previous archaeological projects which took place at Taylor Fish Camp are then summarized. Emphasis is placed on the terminal Late Woodland period evidence, especially the previous projects which produced the faunal materials analyzed for the current study and guided the excavation planned for this project.

Chapter 4 presents the methods and results of the excavation, ceramic analysis, and radiocarbon dating. Characteristics of the shell midden and archaeological features are discussed, followed by a description of the radiocarbon samples selected for testing and interpretation of the results.

Chapters 5 discusses the methods and results of the zooarchaeological analysis. The methods used to identify, analyze, and quantify the invertebrate and vertebrate remains are

described. Results are presented along with accounts of the preferred habitats and seasonal availability of the animals identified.

Chapter 7 discusses subsistence practices of the terminal Late Woodland period inhabitants of Taylor Fish Camp. Results from Chapter 6 are used to infer resource selection and diet, habitats exploited, seasons of procurement, and potential hunting and fishing technologies. Subsistence practices are then combined with non-faunal evidence collected from the site to discuss settlement of the location. Comparisons to subsistence strategies used by roughly contemporaneous inhabitants of nearby sites, and Late Archaic period inhabitants of the same peninsula, are included. The chapter concludes with a summary of the study, conclusions, and recommendations for future research.

CHAPTER 2
PREHISTORIC SETTLEMENT AND SUBSISTENCE IN COASTAL GEORGIA

This chapter places the inhabitants of Taylor Fish Camp in their cultural context by summarizing the prehistoric chronology of the region. Ceramic types and radiocarbon dating indicate the faunal remains analyzed for this study were deposited by Late Woodland/Early Mississippian period occupants of the site. Emphasis is placed on Late Woodland and Mississippian period coastal groups, evidence for subsistence practices, and sites found on Cannon's Point peninsula. The chronology will begin with the Late Archaic period, when sea level reached its approximate current height and the first evidence for Native American habitation of the Atlantic coastline appears. For overviews of the Paleoindian and Early/Middle Archaic periods in the Southeast, see Anderson and Sassaman (1996), Bense (1994), and Sassaman and Anderson (1996).

Late Archaic Period

The Late Archaic (ca. 4000 – 1000 BC) Southeast is defined by larger and more sedentary populations than preceding periods, increasing social complexity, and technological innovations, including the first appearance of pottery in the region. (Sassaman 1993; Sassaman and Anderson 1996; Thomas and Sanger 2010). Sites are typically recognized by distinctive, fiber-tempered ceramic sherds, referred to in Georgia as either Stallings Island or St. Simons, named for two of the locations where they were first recovered.

The earliest evidence for occupation of Georgia's current coastline dates to the Late Archaic period. Until about 5000 years ago, sea level was lower, the current coastline was part of the mainland, and the outer barrier islands were still forming (Anderson et al. 2007). As a result, habitation sites dating to earlier periods are largely absent. Late Archaic groups continued the hunter-gatherer pattern from previous periods, but with a more diverse diet and localized variations around the region (Bense 1994:85-105; Marrinan 1975; Reitz 1988). As sea level reached its current height during the period, coastal groups settled and took advantage of the variety of resources available in the newly-established estuaries. Evidence suggests Late Archaic people began to live on Georgia's coast for longer periods, in larger communities, and may have targeted marine resources more intensively than previous groups, and possibly more so

than succeeding Early Woodland period inhabitants (Thompson and Turck 2009; Marrinan 1975, 2010; Thompson and Worth 2011). Plant foods were consumed by groups living in the Southeast during the period (Bense 1994:90), including those at coastal sites (Marrinan 2010), but evidence suggests a heavy reliance on aquatic resources by groups who created shell rings.

Large, circular, shell deposits are a defining characteristic of Late Archaic coastal groups in the Atlantic Southeast. Several of these shell rings have been investigated in South Carolina, Georgia, and Florida (Colaninno 2010; Marrinan 1975; Michael Russo and Greg Heide 2001; Sassaman and Anderson 1996; Thomas and Sanger 2009). The primary function of the rings is still debated, with locations for seasonal, ceremonial feasting and/or year-round habitation the leading hypotheses (Marrinan 2010; Thompson 2006; Thompson and Worth 2011). Two shell rings, Cannon's Point Shell Ring (9GN57) and West Ring (9GN76), located on Cannon's Point peninsula approximately 1.6 km (1 mile) northeast of Taylor Fish Camp were excavated for a dissertation in the 1970s (Marrinan 1975). Faunal analysis suggests inhabitants focused heavily on shellfish, small-sized estuarine fish and crustaceans, rarely used large mammals, and probably stayed for multiple seasons, possibly year-round (Marrinan 1975, 2010). Results from this study are compared with the current study in Chapter 7. Fine-screened assemblages from several other Late Archaic period shell rings have also been analyzed, showing similar subsistence practices: heavy focus on marine fish and shellfish and lesser dependence on terrestrial resources, and at least multi-seasonal occupation (e.g. Colaninno 2010).

A study (Colaninno 2011) examined fish remains from several Late Archaic shell rings, using estimates of body size, behavioral habits, and frequented habitats of fish species to suggest that mass-capture fishing devices, such as nets, traps, and weirs, were probably more frequently used than individual capture methods, such as spears or hook-and-line.

Early and Middle Woodland Period

The Woodland period (ca. 1000 BC – AD 1000) in the Southeast witnessed a continuation of many trends that were developing during the Late Archaic period. Many groups grew in population, and began to live a more socially complex and sedentary lifestyle (Anderson and Mainfort 2002; Steinen 1995; Wallis 2011). Pottery use became more widespread, and distinct cultures are evident from the variety of stylistic designs found on ceramics in many regions. Many groups built monumental earthworks and evidence for ceremonialism increases,

including the construction of burial mounds for presumably high-status individuals (Anderson and Mainfort 2002). Interaction and trade throughout the region also increased. Evidence for plant cultivation appears during the period, but mainly at inland sites and towards the end of the period. The use of cultigens such as maize, squash/gourd, maygrass, knotweed, goosefoot, sunflower and sumpweed, were increasingly relied upon for subsistence at inland locations, especially in the northern part of the region, but the extent of their contribution to diet during the Woodland period remains unclear (Anderson and Mainfort 2002; Bense 1994: 119).

The Early Woodland period (ca. 1000 – 500 BC) in the Southeast is often viewed as a continuation of Late Archaic trends since many of the cultural developments traditionally associated with the Woodland period did not become fully visible in the region until the Middle Woodland period (Anderson and Mainfort 2002). Early Woodland period sites on Georgia's coast are typically identified by Refuge or Deptford ceramics. Refuge types are more commonly found near the Savannah River and the upper Georgia coast, but are occasionally found farther south, including Cannon's Point peninsula on St. Simons Island (Milanich 1977). Refuge sites are generally small, dispersed shell-middens. An Early Woodland period context in a now submerged marsh site on Cannon's Point suggests a slight shift in subsistence practices at the site, as fine-screened faunal remains excavated from the location show less focus on fish and shellfish and more reliance on mammals possibly related to changes in sea level (Marrinan 1975 2010; see also Thompson and Turck 2009; Thompson and Worth 2011)

The Middle Woodland period (ca. 500 BC – AD 500) has received much attention from archaeologists, since it is associated with widespread exchange of exotic materials and iconography, elaborate mortuary practices, large ceremonial centers, and elaborately decorated pottery. These were mainly features of communities in the Midwest and inland Southeast but are less often encountered along the coast (Anderson 1998; Anderson and Mainfort 2002). Populations were probably dispersed throughout the region, periodically coming together at ceremonial centers located on trade routes, such as major river systems (Anderson 1998; Anderson and Mainfort 2002). These large centers are rare near the southern Atlantic coast, but occupants of Evelyn Mound, a Middle Woodland site located approximately 14 km (8.7 miles) northwest of Taylor Fish Camp, may have practiced similar ceremonialism on a smaller scale. The number and types of mounds, burial goods, and Evelyn Mound's location on a convenient route to the interior (Altamaha River) suggests some coastal participation in a larger network of

exchange (Anderson 1988; Anderson and Mainfort 2002; Wallis 2011). Exotic goods and elaborate burial practices associated with the Hopewellian Interaction Sphere are uncommon at sites on the Georgia coast, but the exchange of pottery designs among coastal communities indicates some level of regional interaction. Evidence for horticulture increases during the Middle Woodland period but is overwhelmingly recovered from inland sites (Anderson 1988; Ashley et al. 2007; Reitz 1988).

Middle Woodland period sites on the coast are primarily recognized by Deptford ceramic types. Swift Creek pottery types are also found at Middle Woodland sites throughout Georgia's coastal plain, but mainly represent Late Woodland period sites on the southern coast. Deptford cultures stretch into the Carolinas, inland Georgia, across Florida and into the Gulf Coast region. Many sites have been investigated extensively; for in-depth discussions of Deptford cultures, see Milanich (1971, 1977, 1980, 1994). Deptford sites on the Atlantic coast are often small middens which are probably refuse from small, possibly seasonal camps (Martinez 1975; Milanich 1980; Reitz 1988). Faunal remains from Deptford contexts on Cumberland Island consisted of some estuarine resources but higher proportions of white-tailed deer and raccoons (*Procyon lotor*), although this is likely a result of using 1/4-in screens (Milanich 1980; Reitz 1988). Small samples of vertebrate remains associated with Deptford ceramics were excavated from locations (unclear; see Martinez 1975:48) near the northern tip of and middle of Cannon's Point peninsula using 1/8-in screens; analysis shows use of nearby marsh habitats to obtain a variety of fish and turtles (Testudines), and little use of mammals (Martinez 1975:90-95; also see Milanich 1977).

Late Woodland Period

The Late Woodland Period (ca. AD 500 – 1000) is not as well-documented as the preceding period. It was previously described as a time of cultural decline, mainly because it lacked the appealing archaeological signatures of the Middle Woodland and Mississippian periods, but Late Woodland peoples are now viewed as remarkably varied, and underwent enough cultural change that broad generalizations about the period are difficult (Anderson and Mainfort 200; Nassaney and Cobb 1991). Some areas of the region saw continuation and expansion of the Middle Woodland lifestyle, while others saw a decrease in mound construction and less exchange of exotic goods. Smaller-sized triangular projectile points, a result of the adoption of the bow-and-arrow, appear in the Southeast. That new technology, along with the

appearance of fortified settlements, indicate that warfare increased during the period (Anderson and Mainfort 2002; Nassaney and Cobb 1991). There is also evidence for widespread population growth during the Late Woodland period, which also may have been occurring along the coast. Cook (1977) investigated several Late Woodland period sites in central and southern St. Simons Island, reporting substantial residential structures and cemeteries, suggesting dense occupation of the island during the period.

Evidence for maize cultivation appears near the end of the Late Woodland period in some areas of the Southeast, especially at inland sites in the northern part of the region (Anderson and Mainfort 2002; Bense 1994:114-120, 165). Crop production became an important part of subsistence practices during the period, but natural resources in coastal areas may have been so abundant that cultivation of crops was not seen as beneficial (Anderson and Mainfort 2002). Late Woodland groups at Gulf and Atlantic coast sites throughout the region appear to have continued following the animal-use pattern of hunting, gathering shellfish, and fishing.

Sites representing the Late Woodland period on the coast of Georgia are recognized primarily by the presence of Swift Creek and Wilmington ceramics. Swift Creek pottery (ca. AD 300 -700) appears on the coast during the Middle Woodland period and is used well into the Late Woodland period. The majority of Swift Creek sites on the Georgia coast are represented by the later variety of Swift Creek pottery, and occur mainly south of the Altamaha River, possibly representing a cultural boundary (Ashley et al. 2007, Wallis 2011). Swift Creek site-types on Georgia's coast are typically small artifact scatters or variously-sized shell deposits, some of which are large arc- or horseshoe-shaped middens near bluff edges (Ashley et al. 2007; Ashley and Wallis 2006; Wallis 2011). Settlement and community patterns of coastal Swift Creek cultures are often difficult to recognize due to the multicomponent, intensively-occupied nature of shell middens (Ashley and Wallis 2006; Ashley et al. 2007).

Two Swift Creek sites on Georgia's coast, King's Bay (9CAM171A) and Cathead Creek (9MC360), have produced fine-screened faunal samples, both recovered from contexts within multicomponent shell deposits (Reitz and Quitmeyer 1988). Analyses of these materials indicate heavy use of aquatic resources and little use of terrestrial vertebrates. Samples are dominated by shallow-water estuarine species typically found in tidal creeks, especially small-sized fish, eastern oysters (*Crassostrea virginica*), and stout tagelus (*Tagelus plebeius*). Mass-capture fishing technologies, such as basketry scoops or fine-mesh nets, were probably used in shallow

waters directly adjacent to the sites (Reitz and Quitmeyer 1988). Faunal evidence also indicates that sites were more than temporary fishing camps, but not enough to suggest year-round occupation (Reitz and Quitmeyer 1988). The slight differences in resources utilized at these two sites was probably a result of their specific locations within the estuary (Reitz and Quitmeyer 1988). For example, remains of fish species that prefer slower-moving waters with lower salinity levels, not commonly found in coastal assemblages, were found at Cathead Creek, a site on the upper-most reaches of an estuary near the mouth of the Altamaha River, suggesting occupants used small catchment areas, exploiting environments very near the site's location (Reitz and Quitmeyer 1988).

Sherd- or grog-tempered Wilmington pottery types are most closely associated with Late Woodland sites on Georgia's coast. Wilmington ceramics are also associated with Middle or Late Woodland sites in South Carolina and Georgia's northern coast. They appear during the Late Woodland period on the Georgia's southern coast, but a more precise chronology and associated cultural characteristics are unclear, especially for St. Simons Island (Milanich 1977). The Wilmington type-sites are on a marsh island near the mouth of the Savannah River and consists of three villages and a continuous shell midden, but many other sites associated with Late Woodland period ceramics are small, shell deposits (Reitz 1988; Thomas 2008b:905-916).

Incremental growth ring analysis of hard clams (*Mercenaria* sp.) and analysis of vertebrate remains recovered using 1/4-in screens from Wilmington-phase shell deposits on St. Catherine's island suggest year-round occupation and heavy use of white-tailed deer and lesser use of fish and turtles (Reitz 2008), not unexpectedly, given the screen size. Martinez (1975) excavated four Wilmington shell-deposits on Cannon's Point, including one just north of Taylor Fish Camp. Analysis of small samples of faunal remains from those units show more evidence of the estuarine pattern. The current study aims to expand these samples for a more representative picture of Late Woodland period subsistence practices in coastal Georgia. Results from Martinez' study are discussed further in Chapter 7.

Mississippian Period

The Mississippian (ca. AD 1000 – 1600) southeast witnessed a continuation of some cultural trends under development during previous periods, culminating with the rise of chiefdoms, then collapsing after European contact during the sixteenth century. The period is

defined by larger populations with social and settlement hierarchies, elaborate iconography and ceremonialism, and a dependence on agriculture. The construction of large fortified villages and platform mounds also characterizes the period. Similar to previous periods, regional variation meant these characteristics were not found among all communities. The number of sites in coastal Georgia increases during the time frame, but some of the traits traditionally associated with Mississippian cultures are not visible until the Middle or Late Mississippian period, or perhaps not at all (Crook 1978, 1984; Pluckhahn and McKivergan 2002; Reitz 1988).

Many dispersed, Wilmington-phase settlements on the coast were still occupied during the Mississippian period. They are classified as Mississippian mainly because of occupation dates rather than evidence for Mississippian cultural traits, such as platform mounds or cultigens (Reitz 1988). However, Crook (1978) argues that the addition of larger, nucleated villages near those smaller, dispersed settlements indicates centralized leadership and hierarchical arrangement characteristic of the Mississippian period. Mortuary evidence also suggests that Mississippian coastal groups had some form of social ranking similar to their inland counterparts (Reitz 1988; Thomas 2008b:1035, 1075-1077).

The St. Catherine's phase, recognized by grog-tempered ceramics very similar to Wilmington types, is likely a transitional phase between the Late Woodland and Early Mississippian periods (Milanich 1977; Reitz 1988). Crook (1984) suggests St. Catherine's ceramics overlap with the following Savannah phase and the emergence of Mississippian culture. Substantial sites with pit features, sand burial mounds, and accompanying radiocarbon dates associated with these ceramic types on St. Catherine's Island show at least a multi-seasonal occupation of a larger group of people from cal. AD 800 – 1300 (Thomas 2008b:895-904, 1027-1051, 2008c:416). A small sample of vertebrate remains from six of those sites, collected using 1/4-in screens, consists of large proportions of white-tailed deer and smaller amounts of raccoon, turtles, and marine fishes (Reitz 2008).

The Savannah phase is generally viewed as the most prevalent Mississippian period component in coastal Georgia (Early Mississippian ca. A.D. 1000 – 1200 and Middle Mississippian ca. AD 1200 – 1400), with varying perspectives on the exact chronology and ceramic typology; (see Bense 1994:211-212; Crook 1978, 1984; Milanich 1977; Reitz 1988; Thomas 2008c:416-420). Sites associated with Savannah ceramics are numerous on the coast and barrier islands, including small shell-deposits, large middens, domestic structures, burial

mounds, and a possible platform mound at Kenan Field on Sapelo Island (Crook 1986). The appearance of settlement hierarchies during the Savannah phase, in the form of larger mound sites surrounded by smaller seasonal camps, are the main indicators of the emergence of Mississippian culture on the coast (Bense 1994; Crook 1986). Numerous shell deposits and burials at the Cannon's Point Midden (9GN21) at the north end of the peninsula were investigated at the turn of the twentieth century (Pearson and Cook 2003), during the early twentieth century (Waring and Williams 1977) and by University of Florida students in the 1970s, most of which were mixed contexts but contained Savannah and Irene ceramics (Crook 2011; Martinez 1975; Wallace 1975).

Irene ceramics are diagnostic of the Late Mississippian period (ca. AD 1400 – 1600) on Georgia's coast. The only clear example of a platform mound on the coast is the Irene type-site, a ceremonial center with a plaza and burial mounds on the Savannah River (Caldwell and McAnn 1941; Reitz 1988). Sites on St. Catherine's Island increase in size and number during the Irene phase (Thomas 2008b:1035, 1049-1051), concurrent with signs of population increase along the coast. Taylor Mound, a burial mound associated with Savannah and Irene ceramics, as well as protohistoric artifacts, is located approximately 550 m southwest of Taylor Fish Camp and may be directly related to Taylor Fish Camp's Middle Mississippian period occupants (Crook 2011; also see Cook and Pearson 1972; Pearson 1977; Wallace 1975). For Ronald Wallace's dissertation (1975), graduate student Kathy Johnson analyzed a small sample of likely Late Mississippian or Protohistoric period animal bones discarded at the north end of Cannon's Point peninsula, though the recovery methods and context are unclear. Wallace (1975) suggests, based only on a bone count, that white-tailed deer and sturgeon were the most important components of diet, followed by sea catfish (Ariidae) and drums (Sciaenidae).

Subsistence practices during the Mississippian period are usually discussed in terms of intensive cultivation of maize and other plant foods. Cultivation of crops, especially corn, became a central focus among inland groups, especially along the floodplains of interior rivers and tributaries. Clear evidence for farming on the coast is lacking until the Late Mississippian period and after the arrival of Europeans. Grove's Creek Site (09CH71) on Skidaway Island, Georgia, recovered rare evidence for cultivated foods from Late Mississippian period contexts, including beans, squash, sunflower, and a variety of fruits, in addition to corn (Keene 2004). Stable isotope analysis of skeletal remains from coastal Mississippian sites also suggest that corn

did become part of the diet during the latter part of the period (Larsen 2002:44-45; Reitz 1988; Schoeninger et al. 2009) Burned corn kernels or cobs have been recovered from several Late Mississippian period sites on the coast, including Kent Mound on St. Simons Island (Cook 1978), but many of these may have come from protohistoric contexts and may not be representative of prehistoric diet (Reitz 1988). Soil conditions on the coast may not have been conducive for consistent farming, but the extent to which cultivated foods contributed to coastal diets is unclear. Estuarine resources may have been reliable and desirable enough to support large groups of people on their own, or as the main focus of subsistence activities.

A lack of solid evidence for agriculture has been used to support hypotheses of seasonal mobility of coastal Mississippian peoples. Larson (1980) and Crook (1986) have proposed a seasonal-round model, suggesting movement throughout the seasons to find necessary resources, but the study at Grove's Creek used seasonal availability of plants and animals recovered from the site, along with stable isotope data, to demonstrate that occupants were likely sedentary, living in permanent villages year-round (Keene 2004).

Vertebrate remains recovered from four sites on Sapelo Island and Kings Bay Naval Submarine Base near Cumberland Sound, Georgia, all from Savannah and Irene phase contexts, were analyzed for a study of Mississippian period animal use (Reitz 1982). The materials were collected using various recovery techniques and screen sizes but are adequate representatives of subsistence strategies. Results show a heavy focus on fishing, supplemented by white-tailed deer hunting, and limited use of turtles and birds (Aves). The faunal remains also indicate at least multi-seasonal and possibly permanent occupation. Variation in the species identified between sites are likely a result of small differences in the geographic location on the coast (Reitz 1982). Analysis of vertebrate remains from several Middle and Late Mississippian period sites on St. Catherine's Island had similar results: mostly fishes, along with some turtles and raccoon, but with high proportions of white-tailed deer as a result of the 1/4-in screening method (Reitz 2008).

Summary

The prehistoric Southeast saw the development of numerous cultural and environmental trends over millennia of Native American occupation. Changes in population, social settings, settlement patterns, and pottery types are visible in the archaeological record, including sites in

coastal Georgia. Sites representing every prehistoric period since the Late Archaic can be found on St. Simons island and Cannon's Point peninsula. When sea level reached its approximate current level during the Late Archaic period around 3000 B.C., people began to settle on the coastline and newly created barrier islands, remain there for multiple seasons, and exploit the wide variety of resources available. This broad pattern, with only minor variations, appears to have remained largely unchanged until the arrival of Europeans in the sixteenth century.

Analyses of fine-screened faunal remains from prehistoric coastal sites indicate a general pattern of heavy use of aquatic resources and lesser use of terrestrial animals. Marine resources found in shallow-water estuaries – mainly oysters and a core group of fish – are typically most prominent, but are often recovered along with a rich mix of other vertebrates and invertebrates, including terrestrial mammals, birds, and reptiles. White-tailed deer are well-represented in some collections, but fish remains often dominate. Estimates of body size, behavioral habits, and frequented habitats of fish species suggest that mass-capture fishing devices, such as nets, traps, and weirs, were probably more frequently used than individual capture methods, such as spears or hook-and-line (Colaninno 2011, Reitz et al. 2009). Faunal data also indicate that coastal inhabitants likely lived there during multiple seasons and possibly year-round.

No large shifts in subsistence practices are evident until the Late Mississippian and Protohistoric periods, when agriculture and European influences were introduced to coastal groups, but minor variations in coastal adaptation are visible in the prehistoric faunal record. Variability in the general estuarine pattern has been observed in the zooarchaeological record and is attributed to temporal shifts in resource selection due to environmental changes or overfishing (Quitmeyer and Reitz 2006; Reitz 2004), site locations and nearby habitats exploited (Lawson 2005; Reitz 1982a, 1982b; Reitz and Quitmeyer 1988), and archaeological screening methods (Reitz 1982b, 2012).

CHAPTER 3
TAYLOR FISH CAMP: THE NATURAL ENVIRONMENT AND PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS

Taylor Fish Camp (9GN12), sometimes referred to as Lawrence Shell Midden, is a poorly-defined, multi-component site located inside Cannon's Point Preserve, near the northeastern tip of St. Simons Island in Glynn County, Georgia. The Preserve is approximately 243 hectares (600 acres) and accounts for most of a 4.8 km-long (3 miles) peninsula surrounded by salt marsh. A large portion of the Preserve contains one of Georgia's few-remaining maritime forests, supporting a diverse mix of flora and fauna (Figure 3.1). St. Simons Land Trust (SSLT) purchased the property in 2011 to preserve the numerous natural and archaeological resources on Cannon's Point peninsula. Archaeological sites representing Late Archaic, Woodland, Mississippian, Protohistoric, and Historic period occupants have been recorded throughout the property. Previous research has shown that the peninsula has been occupied for at least 4,000 years, offering access to a dependable and probably desirable supply of aquatic and terrestrial resources.

This chapter describes the physical environment of Taylor Fish Camp and the peninsula, along with a brief summary of the invertebrate and vertebrate animals commonly found in archaeological collections from the Georgia coast. Each archaeological project which took place at or near Taylor Fish Camp is then summarized, with emphasis on the prehistoric components. For more information on the historic occupations of the peninsula, see Crook (2011), Harris and Honerkamp (2015), Honerkamp and Cochran (2015), Moore (1981), and Otto (1975, 1984). For more information about other prehistoric sites on the peninsula, see Crook (2011) Honerkamp and Cochran (2015), Marrinan (2010), Martinez (1975), McCarty (1975), Milanich (1977), Pearson (1977, 2014), and Wallace (1975).

Environmental Setting

St. Simons Island is one of a series of barrier islands extending the length of the Georgia coast (Figure 3.2). The coastline and its barrier islands are located near the middle of the Georgia Bight, a shallow embayment reaching from Cape Canaveral, Florida to Cape Hatteras, North Carolina. Physical characteristics of the Bight lead to decreased wave energy, higher tidal

Figure 3.1: Cannon's Point Peninsula, northern St. Simons Island.

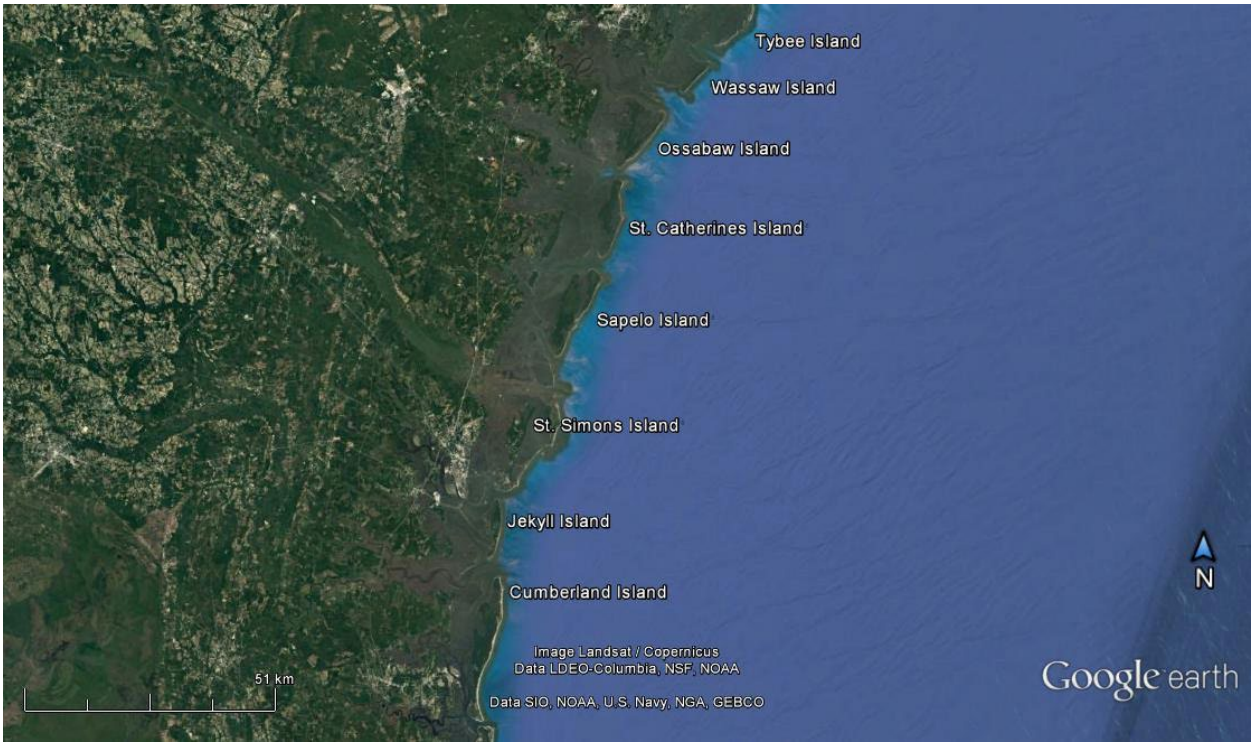


Figure 3.2: Georgia's barrier islands.

ranges, and expansive salt marshes and estuaries between the mainland and barrier islands. These estuaries and unique island habitats have provided a diverse mix of aquatic and terrestrial resources for past and current residents. St. Simons is located just south of the mouth of the Altamaha River, a biologically rich delta fed by the Ocmulgee and Oconee Rivers, providing additional subsistence opportunities for coastal groups.

Most of Georgia's barrier islands, including St. Simons, formed as a result of fluctuating sea levels during the Late Pleistocene, probably 25,000 to 50,000 years ago (Johnson et al.1974; Linsley et al. 2004). However, some of the smaller barrier islands to the east of the larger islands were created by Holocene deposits, approximately 5,000 to 10,000 years ago (Johnson et al. 1974). This double-island formation is what led to the current configuration of St Simons, Sea Island, and Little St. Simons Island (Figure 3.1). Taylor Fish Camp, though on the east side of a barrier island, is not facing a beach and open sea, but borders an extensive marsh system between its own shoreline and Little St. Simons Island (Figure 3.3). Sea level has not changed significantly in the last 5,000 years (Thompson and Worth 2011); it can be assumed that Late Woodland/ Early Mississippian period residents of the site experienced a similar ecological setting to that seen today.

The climate of St. Simons Island is subtropical and moderate, bringing short and mild winters, but long and hot summers. Temperatures during the coldest months, December and January, reach an average minimum near 40°F, while the warmest months, July and August, reach an average maximum in the high 80s and low 90s (Johnson et al. 1974). The island receives an average of 114 cm of rainfall per year (U.S. Climate Data 2109), with July through September being the wettest months (Johnson et al. 1974).

The dominant vegetation of barrier islands and of Cannon's Point peninsula are live oak trees. The canopy and food sources created by live oaks, along with hickory, magnolia, pines, palmettos, and numerous other floral species, attracts a variety of animals (Johnson et al. 1974). Mammals such as white-tailed deer, raccoon, opossum (*Didelphis virginiana*), squirrels (*Sciurus* sp.), and rabbits (*Sylvilagus* sp.) are common on the interior of the island and probably provided reliable food sources for prehistoric residents. Other taxa found in the interior and near freshwater sources are the American alligator (*Alligator mississippiensis*), snakes and lizards (Squamata), frogs and toads (Anura), mice and rats (Cricetidae), and numerous species of birds

Figure 3.3: Looking east from Taylor Fish Camp, towards Little St. Simons Island (photo courtesy of St. Simons Land Trust).

and turtles. Pond turtles (Emydidae), especially the diamondback terrapin (*Malaclemys terrapin*), are well represented in prehistoric middens on the coast, as they thrive in the brackish environments.

Fishes found in freshwater or low-salinity environments are available in the lower Altamaha River and the upper estuaries adjacent to Cannon's Point peninsula. Largemouth bass (*Micropterus salmoides*) and numerous other sunfishes (Centrarchidae), bowfin (*Amia calva*), pickerel (*Esox* sp.), and gar (*Lepisosteus* sp.) are accessible from the barrier islands but are less common in the archaeological record. Several species of anadromous herrings and shads swim up the river during late winter and spring to spawn, while others in the family are more common year-round (Dahlberg 1975). Sturgeon are also anadromous, returning as adults from the ocean to spawn in freshwater and upper estuaries sometime between late winter and late spring.

The beach side and offshore waters on the east side of barrier islands (southeastern St. Simons Island) offer animal resources, but they are not commonly found in faunal assemblages. Bottlenose dolphins (*Tursiops truncatus*), large sharks and rays (Chondrichthyes), and some species of sea turtles frequent the open water and deeper sounds of the area, but do not seem to have been regular targets for Native American residents (e.g. Bergh 2012; Colaninno 2010; Reitz 1982a; Reitz and Quitmeyer 1988)

The most dependable resources, and the most common species found in prehistoric middens on the coast, reside in tidal creeks, mud flats, marshes, and lagoons, all of which are immediately accessible from Taylor Fish Camp. Common mollusks include eastern oysters, hard clams, Carolina marsh clams (*Polymesoda caroliniana*), Atlantic ribbed mussels (*Geukensia demissa*), whelks (Melongenidae), marsh periwinkles (*Littorina irrorata*), eastern mudsnails (*Ilynassa obsoleta*), and stout tagelus. These are the most common taxa found in shell middens on the Georgia coast. Blue crabs (*Callinectes sapidus*) and white or brown shrimp (*Penaeus* sp.) are a popular food source today on Georgia's coast, and may have been an important component of prehistoric diets, but do not preserve well in the archaeological record and are not commonly found at coastal sites.

A variety of fishes are available in the shallow-water estuaries near Taylor Fish Camp, many of which are the common vertebrates in archaeological collections from Georgia's coast. Several species of drums, two species of sea catfish, and mullet (*Mugil* sp.) can be captured nearly year-round (Dahlberg 1972, 1975), and must have been a regular food source for coastal groups, as these taxa usually dominate faunal assemblages. Other fishes which can be found in the estuaries and are recovered from coastal archaeological sites on the coast include flounders (Pleuronectiformes), sheepshead (*Archosargus probatocephalus*), pinfish (*Lagodon rhomboides*), killifishes (Fundulidae), jacks (Carangidae), grunts (Haemulidae) ladyfish (*Elops saurus*), needlefishes (Belonidae), skates (Rajiformes), and rays (Myliobatiformes).

Previous Archaeological Projects

A professional archaeologist first visited Taylor Fish Camp in 1938, when Preston Holder noted shell and prehistoric pottery on the surface (Georgia Archaeological Site File [GASF] 1971). In 1971, archaeologist Chester Depratter surveyed the area but did not excavate, recording the site in the GASF as one of the largest shell middens on St. Simons Island (Figure

3.4, Area 1). The midden was described as several-hundred feet wide and running north for a 1/4 mile along the marsh edge from "Taylor's Landing," currently the location of Cannon's Point Preserve's parking lot, dock, pavilion, a restroom facility, and the Terry Thomas Ecology Lab. The site was defined as Archaic to Late Prehistoric, but mostly Middle to Late Woodland (Swift Creek, Deptford, and Wilmington) and Mississippian period (Savannah) pottery types were noted on the surface (GASF 1971). Fire pits, house floors, and shell deposits up to 4 feet thick were also observed, probably exposed by locals who dug into the shell midden for road fill (GASF 1971).

Excavations carried out by University of Florida graduate students during the 1970s included units in two areas just north of Taylor Fish Camp, but their exact locations are unclear (Crook 2011; Martinez 1975; visit by the author; Figure 3.4, Area 2). In an effort to outline a prehistoric ceramic sequence and settlement patterns at Cannon's Point, master's student Carlos Martinez (1975) placed two adjoining units on one of several discrete, circular shell-deposits visible on the surface, then placed a third unit on a nearby looter's pit within a larger shell midden. Both locations were on a slightly elevated bluff near the marsh's edge on the peninsula's southeastern shoreline. Excavations at the first location revealed the shell deposit was about 4 meters in diameter, and contained overwhelmingly Wilmington pottery types, with smaller numbers of Deptford, St. Johns, and Savannah sherds. A radiocarbon sample later produced a corroborating Late Woodland period date of 1130 +/- 70 BP (Milanich 1977; 711-745 cal AD [p=.036] 764-1025 cal AD [p=.964], calibrated at 2σ with Calib7.1 [Reimer et al. 2019]). Martinez (1975: 60-63) suggested a single-component occupation, possibly as a hunting/fishing camp, as no structural features were recorded.

A unit at the second location (Figure 3.4, Area 2) was interpreted as having two components (Martinez 1975: 63-66). A lower deposit was described as an irregularly-shaped shell and sand pit containing mostly fiber tempered sherds, with smaller amounts of Deptford types, and two complicated-stamped types (St. Andrews and Crooked River) which may be varieties of Swift Creek. The deep, dark, humic deposit and the frequency of larger sherds led Martinez (1975) to suggest that the location was used as a primary living area. No radiocarbon samples were tested from that component.

Figure 3.4: General locations of archaeological projects at/near Taylor Fish Camp. Most projects are referred to by the names commonly used by members of the St. Simons Land Trust and Coastal Georgia Historical Society. Area 1: original location recorded in 1971 (UTM coordinates - NAD 1927, Zone 17, E 467624 N 3458480; GASF); Area 2: Carlos Martinez (1975) University of Florida excavation; Area 3: Brockington and Associates excavation (no report publicly available); Area 4: Mystery Tabby (Honerkamp 2013); Area 5: Pavilion (Honerkamp 2013); Area 6: Terry Thomas Ecology Lab (Honerkamp 2013); Area 7: Lawrence site (Honerkamp 2015); Area 8: Observation Tower (Honerkamp 2014); Area 9: Cattle Dip (Meranda 2018a); Area 10: Donor Board 2014 excavation (Donor Board-1; no report available), and the location of 2018 excavation for the current study; Area 11: Garden site (Meranda 2015b); Area 12: Living Shoreline (Meranda 2018c); Area 13: Restroom Facility (no report available); Area 14: Taylor Mound (9GN55; Cook and Pearson 1972; Pearson 1977; Wallace 1975).

The upper component from the unit was described as an 18 – 20 cm thick shell-midden of unknown length or width. Disturbances from looters did not allow for any interpretation beyond a refuse midden (Martinez 1975). The deposits contained mostly Deptford ceramic types, with smaller numbers of Wilmington and Swift Creek varieties (St. Andrews, Crooked River, and Brewton Hill). Deptford ceramics found on Georgia's coast represent the Middle Woodland period, while Wilmington and Swift Creek varieties are typically associated with the Late

Woodland period. A radiocarbon sample from the upper component returned a Late Woodland period date of 1300 +/- 80 BP (uncalibrated dates from Milanich [1977]; 599- 896 cal AD [p=0.989] 927-942 cal AD [p=.011], calibrated at 2σ with Calib7.1 [Reimer et al. 2019]; see Appendix A).

As part of Martinez' (1975) study, small samples of faunal materials collected using 1/8 in. (3.175 mm) screens from the three components discussed above were analyzed. Probably because of the assemblage's small size, results of the analysis are not included in more recent comparative studies of prehistoric coastal subsistence (e.g. Parsons and Marrinan 2013; Reitz 2014; Reitz et al. 2009). His study indicates some use of terrestrial resources and a nearby freshwater pond, along with heavy use of the marsh and tidal creeks. Martinez's Late Woodland period faunal samples will be supplemented by the current study and will be discussed further in chapter 6. For a more in-depth discussion of ceramic seriation at Cannon's Point peninsula, see Martinez (1975) and Milanich (1977).

Archaeological investigations which took place at or near Taylor Fish Camp before St. Simons Land Trust (SSLT) purchased the property revealed the complexities of the site. An exceptionally large shell-midden and smaller, discrete shell-deposits contain materials representing prehistoric periods which span over 3,000 years. The density of shell deposits and ceramic sherds, pit features, and possible house-floors, indicate the area was occupied for extended periods of time. The site was not bounded or defined, but surface finds and limited excavations up to that point suggest that Native Americans may have used the location more heavily during the Middle to Late Woodland and Mississippian periods. The site, and the entire peninsula, remained largely undeveloped for the next several decades. No archaeological projects took place at Taylor Fish Camp again until 2002. When the St. Simons SSLT purchased the property for the creation of Cannon's Point Preserve in 2012, a series of projects with varying goals and field methods began, yet none bounded or adequately defined the site. In the following sections, each project is summarized in chronological order, with brief descriptions of the prehistoric artifacts and features encountered, and when available, the archaeologists' interpretation.

2002. Brockington and Associates was contracted to mitigate the discovery of human remains during the construction of a residential home at Taylor Fish Camp in 2002. The home sits approximately 120 m north of the excavation unit for the current study, on a private lot now

surrounded by the Preserve (Figure 3.4, Area 3). A report is not available to the public, but published literature (Ashley et al. 2007) and personal communication with members of the SSLT and CGHS indicate that mainly Late Woodland and Mississippian period contexts were found.

2011. Before the SSLT acquired the property in 2012 to create Cannon's Point Preserve, archaeologist Ray Crook (2011) conducted a reconnaissance of known archaeological sites to inform the prospective purchasers of their locations and condition. Crook used the GASF, published reports, and a historical map to locate sites within property boundaries. Locational information about some sites was inaccurate, but Taylor Fish Camp was easily found, as the area is a well-known local landmark and UTM coordinates listed in the GASF for the site are correct. The site's general location was clear and prehistoric shell deposits were observed on the surface, but its boundaries and archaeological content remained poorly defined. Crook (2011) suggested that a component of the site could be a village associated with Taylor Mound (9GN55), a Middle/Late Mississippian and Early Contact period burial mound located about .5 km (.31 miles) south of Taylor Fish Camp (Figure 3.4, Area 14). Crook also noted access roads, open fields, and other modern activities in the Taylor Fish Camp area which may have disturbed archaeological resources.

The projects that are summarized below took place after SSLT acquired the property. Nearly every project was organized and/or assisted by Myrna Crook, wife of the late archaeologist Ray Crook, and member of the SSLT History and Archaeology Task Force. Most projects were also assisted by Doug and Melanie Cranford, who are local landowners, SSLT members, and exceptional volunteers. "Volunteers" in the following sections refer to Crook, the Cranfords, and many other members of SSLT, CGHS, and Golden Isles Archaeological Society (GIAS) who provided their help in the field and laboratory. All artifacts recovered from the following projects are curated at the CGHS archaeological laboratory and repository on St. Simons Island.

2013. University of Tennessee at Chattanooga (UTC) field school students and a group of volunteers, led by University of Tennessee archaeologist Nicholas Honerkamp excavated several 50 x 50 cm survey units in three areas at Taylor Fish Camp (Honerkamp 2013). Eight units were placed adjacent to the "Mystery Tabby," a building (Figure 3.4, Area 4) which was sometimes associated with the nearby eighteenth century Lawrence Plantation. Results showed the building likely post-dates the nineteenth century (Honerkamp 2013). Survey units also

recovered 96 prehistoric sherds representing the Late Woodland, Mississippian, and Proto-Historic periods. All were removed from road fill or plow zone contexts. No prehistoric features were recorded.

The second area excavated was at the current location of the Cannon's Point Preserve pavilion (Figure 3.4, Area 5) , approximately 70 m west of the UTM coordinates recorded for Taylor Fish Camp in GASF. Five survey units were placed where the pavilion structure was to be built, all of which recovered shell and a total of 94 prehistoric sherds. Most identified ceramics date to the Late Woodland and Mississippian periods, but the Late Archaic and Protohistoric periods were also represented, including a single sherd identified as Colonoware. Another interesting find is a limestone-tempered rim sherd which may contain a red slip, usually associated with Late Woodland/Early Mississippian Hamilton types in southeast Tennessee (Honerkamp 2013). All units showed evidence of a plow zone. Honerkamp (2013) suggests the shell near the surface could have originated from the prehistoric middens or are a result of historic "sweetening," the spreading of crushed shell among crops to encourage growth. The edge of a single prehistoric shell-feature was encountered in one unit but was not investigated further. It was interpreted as originating from the Middle Mississippian period, as a Savannah Check Stamped sherd was removed from the fill (Honerkamp 2013).

The third area investigated for the project was the current location of the Terry Thomas Ecology Lab (Figure 3.4, Area 6). A single 50 x 50 cm unit was placed near the structure to explore a potential location for an observation tower. The unit encountered intact prehistoric shell-midden which included mammal bone, drum teeth, fish otoliths, and ceramics representing Late Woodland and Mississippian period occupants (Honerkamp 2013).

Later in 2013, an archaeological monitoring project took place during the construction of the pavilion, at the location where the five 50 x 50 cm units mentioned above were excavated (Figure 3.4, Area 5; Honerkamp 2014). Intact prehistoric midden, artifact concentrations, and potential features were briefly investigated while construction workers dug foundations for the structure. A small sample of the midden produced mostly St. Simons Plain sherds, two Savannah types, one St. Johns, and fragments of turtle shell (Honerkamp 2014). Twelve potential prehistoric features were recorded, most of them observed just below the plow zone, which consistently ended between 25 and 30 cm below the surface (Honerkamp 2014). Features included six probable postholes, two of which date to an unknown period, the other four

probably associated with Wilmington, St. Catherine's, or Savannah period cultures (Honerkamp 2014). A bone fragment removed from a Savannah period posthole was tentatively identified as a bird femur (Honerkamp 2014). One shell feature, either a circular depression filled with midden contents or an intentionally-dug shallow pit, probably dates to the Late Woodland period. At least two storage or refuse pits were recorded, one also containing Wilmington sherds and likely originating from the Late Woodland period (Honerkamp 2014).

2014. UTC field school students and local volunteers, again under the direction of Nicholas Honerkamp, carried out survey and testing at Taylor Fish Camp during the summer of 2014. The "Lawrence Site" is the possible location of an eighteenth-century plantation house, which later became the spot where the Taylor brothers built a house (Figure 3.4, Area 7; Honerkamp 2015; also see Pearson 2014). Thirteen 50 x 50 cm survey units and three 1 x 1 m test units were excavated to date and bound the historical materials. Recorded features and a few antebellum artifacts suggest that the Lawrence occupation may be represented (Honerkamp 2015). As expected, the excavations also encountered shell and pottery likely associated with the widespread, prehistoric midden for which Taylor Fish Camp is known (Honerkamp 2015). A small number of Native American pottery types could be identified from these units (Deptford, Swift Creek, Walthour, Savannah).

In the late summer of 2014, at the request of SSLT, Nicholas Honerkamp directed local volunteers during an excavation preceding the construction of a maritime-forest observation tower on the western side of the Taylor Fish Camp area (Figure 3.4, Area 8). Six 50 x 50 cm units were placed where the tower's support piers would enter the ground. No features or historic artifacts were recorded, but 29 prehistoric sherds were recovered (Honerkamp 2014). Most identified pottery types are associated with the Woodland and Mississippian period on Georgia's coast (Deptford, Walthour, St. Johns, Savannah, Irene). Late Archaic, fiber-tempered sherds (St. Simons) were also present. Dense, intact shell midden, often found during excavations closer to the marsh at Taylor Fish Camp, was not evident here, but scattered oyster and clam shells were recovered from each unit. This project highlights the need to determine the boundaries of archaeological materials at Taylor Fish Camp, as it is unclear if these units exposed the western edge of the prehistoric midden (Honerkamp 2014).

During the fall of 2014, SSLT was required to remove large amounts of subsurface materials at Taylor Fish Camp, as a result of ground contamination by arsenic. Historic

occupants of the site, like many other cattle owners in the Southeast, ran their cattle through a trough filled with chemically-treated water, sometimes referred to as a "cattle dip," to rid the animals of disease-carrying ticks (Johnson 1986; Meranda 2018) resulting in contamination of surrounding soil. Heavy machinery was required to remove a substantial amount of contaminated dirt and shell in a dense portion of the prehistoric midden (Figure 3.4, Area 9,). Subsequent tests have shown that environmentally harmful chemicals were successfully removed from the location. The property manager allowed members of the SSLT and CGHS to collect artifacts and animal bone exposed during the excavation of contaminated soil. No screening took place, and only larger or more visible artifacts were retrieved. Three-hundred fifty prehistoric sherds collected were appropriately cleaned and are now curated at the CGHS repository. The majority of identifiable ceramics date to the Late Woodland and Early Mississippian periods (Wilmington, St. Catherines), with smaller numbers of Late Archaic (St. Simons), Middle Mississippian (Savannah), and Protohistoric (Altamaha) sherds. A modified whelk shell and a small number of unidentified animal bones were also collected. Archaeological features were exposed, including likely shell pits and postholes among dense shell deposits extending at least 1 m below the surface. Photos of wall profiles are available at the CGHS.

2014 Donor Board Project. In September of 2014, excavations preceded the installation of a monument recognizing SSLT donors, referred to locally as the Donor Board (project referred to here as Donor Board-1; 2018 excavation at the location referred to as Donor Board-2). The monument was erected in a central location of Taylor Fish Camp, visible to Cannon's Point Preserve visitors, but its concrete footing required ground disturbance in a significant area which was very likely to contain dense, intact, prehistoric deposits (Figure 3.4, Area 10). The project has yet to produce a final report, but a brief preliminary report, wall profile and plan-view sketches, photographs, and artifacts collected are curated at the CGHS and were available to the author. Materials recovered indicate Late Woodland and Early/Middle Mississippian period midden deposits are present at the location. Results from the excavation guided the placement of the 1 x 1 m unit for the current project (see Chapter 4).

Two 90 x 110 cm units and an adjoining triangular-shaped unit were excavated in 2014 to accommodate the shape of the monument (Figure 4.1). Excavators encountered dense shell midden and several prehistoric features, including at least two possible postholes.

The postholes probably originate from a Late Woodland period structure, as one contained a Wilmington sherd. Another possible posthole contained dozens of burned acorns. Most identified ceramics date to the Late Woodland period (Swift Creek, Wilmington, St. Catherine's), along with smaller amounts representing the Mississippian period (Savannah) and the Late Archaic (St. Simons) periods. A bone pin and two whelk shells which may show evidence of modification were also recovered. A feature at the bottom of the midden was described as a layer of dense shell with high concentrations of charcoal and animal bone. A sample of animal remains collected from that deposit, using 1/4-in screens, was analyzed for the current project. The sample was dominated by fish remains, especially sea catfish, and will be discussed further in Chapters 6 and 7.

2015. During the summer of 2015, volunteers carried out a surface collection on a cleared area just north of Taylor Fish Camp (Figure 3.4, Area 11). The area was used for a large garden by historic and modern landowners and has remained relatively open. SSLT planned to use the section for a live oak nursery, plowed the area, but did not plant any trees. The surface collection took place after the plowing. Only light scattering of crushed shell was reported by the volunteers. Workers collected an assortment of prehistoric ceramics, including St. Simons, Thom's Creek, Deptford, St. Johns, Swift Creek, Walthour, Wilmington, Savannah, Altamaha, and Irene. A Late Archaic period projectile point and a whelk shell showing evidence of use as a tool were also recovered.

In the fall of 2015, another collection of artifacts which did not involve a professional archaeologist was carried out preceding the creation of a living shoreline, a less-disruptive method for preventing erosion on tidal waterways and marshes. Mesh bags filled with oyster shell were placed along the banks at Taylor Fish Camp on the north and south sides of the dock (Figure 3.4, Area 12). Contracted workers who salvaged parts of an old dock, removed small portions of the natural shoreline, and planted vegetation on higher parts of the bank, were instructed to save any artifacts that were uncovered. Exact proveniences for these materials are unknown. Archaeology volunteers participated in the project by excavating a 4 x 4 ft. square, 6-in deep, preceding the installation of a concrete pad leading to the dock. A small number of prehistoric ceramics were collected. Those which could be identified (Deptford, Walthour, Wilmington) are associated with the Woodland period.

2016 - 2017. During the spring of 2016 and later in 2017, excavations preceded the construction of a restroom facility and associated plumbing at Taylor Fish Camp (Figure 3.4, Area 13). A report has not been written for this project and many artifacts have yet to be analyzed. In 2016, led by Myrna Crook and this author, volunteers excavated a 1 x 1 m unit and twenty-eight 50 x 50 cm survey units, five of which were expanded to 1 x 1 m units to further investigate prehistoric features. Excavations revealed a consistent plow zone, intact prehistoric midden, probable refuse and fire pits, and numerous postholes. Preliminary identifications of ceramics suggest all prehistoric time periods since the Late Archaic may be represented, but pottery types associated with the features date to the Late Woodland or Mississippian periods (Wilmington, St. Catherine's, Savannah). One shallow shell pit contained St. Catherine's sherds, charcoal, and large fragments of animal bone; a radiocarbon sample was tested from this provenience and is discussed in Chapter 5. Faunal remains, collected with 1/4-in screens from the same feature, were analyzed for the current project are discussed in Chapter 6 and 7. Another possible refuse pit contained Savannah sherds; a charcoal sample from that feature was radiocarbon-dated for the current project is also discussed in Chapter 5.

Prehistoric human remains were also encountered during the 2016 excavations. After the Georgia Department of Natural Resources was notified, archaeologists and students exhumed the burial (Nolan et al. 2016; Teague-Tucker et al. 2016). Following recommendations from the Georgia Council on American Indian Concerns, the remains were then reinterred at a nearby location on the Preserve. Analysis of the remains before being reinterred revealed they belonged to a female, probably in her twenties, with evidence of trauma to her thorax and pelvic region (Nolan et al. 2016; Tucker et al. 2016). The burial also contained remains of a perinatal infant, who may have died during birth, along with her mother, as a result of the injuries suffered by the adult (Nolan et al. 2016; Tucker et al. 2016). No artifacts were found in direct association with the burial, but a shell feature directly above the remains contained Savannah pottery types.

In 2017, after building plans for the restroom facility were changed, excavations continued when volunteers placed units (exact dimensions currently unavailable) where the structure would disturb subsurface remains. No features were recorded, but intact shell middens were reportedly encountered. Prehistoric sherds from this portion of the project have been identified, showing a much stronger representation of Late Archaic residents, and smaller amounts of the typical ceramic types recovered from previous projects at the site.

Summary

Cannon's Point peninsula is a unique location on Georgia's coast for its natural and cultural resources. Archaeological research has revealed dense concentrations of prehistoric and historic sites, among an intact maritime forest and bordering productive marshes and tidal creeks. Nearby inlets, rivers, beaches, island hammocks, and the mainland would have also provided access to aquatic and terrestrial resources for inhabitants of the area, as evidence shows that humans occupied the area for a least 4,000 years. Faunal analysis of Late Archaic period deposits suggest that residents of the peninsula took full advantage of vertebrate and invertebrate resources commonly found in the estuaries. Small samples of Middle and Late Woodland deposits collected from the peninsula (Martinez 1975) indicate use of the marshes, estuaries, and a freshwater pond for resource collection.

Thirteen archaeological projects have taken place at or near Taylor Fish Camp since the site was first recorded. The boundaries of the site are still unclear, and only one project has attempted to define any of the prehistoric occupations at or near the site (i.e. Martinez 1975). Nearly every project carried out was either guided by questions related to the historic components or conducted salvage-style excavations with limited time and opportunity for adequate interpretation of prehistoric components. Some projects have not produced a written report, did not involve a professional archeologist, or used unsystematic field methods. A substantial amount of midden material was likely lost during the Historic and modern periods due to looting and shell collection for the construction of tabby and roads. Cultural resources were also disturbed during multiple projects carried out by SSLT for improvements to Cannon's Point Preserve. However, largely due to the best efforts of the current Property Manager, local volunteers, and partnering archaeologists, valuable portions of the record of Native American occupation of the peninsula and Taylor Fish Camp have been preserved.

Identification of some artifacts collected from the site - at least several hundred - has not yet been attempted (i.e. 2016-17 Restroom Facility excavation), and others may require further analysis. Most ceramic identifications of Taylor Fish Camp materials were made by, or under the direct supervision of, a professional archaeologist, but a small portion of identifications were made by undergraduate students, CGHS interns, or volunteers. A compilation of all the prehistoric ceramics which have been identified from the projects discussed above is presented in Table 3.1. Though this offers limited information, it does shed some light on the occupation of

an apparently attractive location. All prehistoric periods are represented, but pottery types suggest that the heaviest use of Taylor Fish Camp may have occurred during the Late Archaic and the terminal Late Woodland to the Middle Mississippian period.

Investigation and interpretation of the prehistoric occupation has been minimal, but numerous pit features and postholes have been recorded in multiple locations. Features which contained diagnostic ceramics likely date to the Late Woodland to Middle Mississippian periods. No archaeological feature has been interpreted as originating from any other periods.

Much more professional research is necessary to understand the boundaries and content of this large and complex site, but available evidence to this point indicates a large, continuous shell midden of unknown size, smaller discrete shell deposits, multiple structures, numerous refuse pits, and possibly more burials, most of which probably originate from the terminal Late Woodland and Early/Middle Mississippian periods. Crook's (2011) suggestion that the site is a village closely associated with the Middle Mississippian period groups who used the nearby Taylor Mound is likely true, but significant use of the location during the Late Archaic and Late Woodland/Early Mississippian periods has since become apparent.

Table 3.1: Prehistoric Ceramics from 10 Projects at Taylor Fish Camp (9GN12), 2012-2017				
Period/*Type*	**Count**	**%**	**Weight (g)**	**%**
Late Archaic (ca. 4000 - 1000 BC) *St. Simons/fiber-tempered*	292	39.0	2,992.6	41.0
Early Woodland (ca. 1000 – 500 BC) *Refuge, Thom's Creek*	8	1.1	55.5	0.8
Middle Woodland (ca. 500 BC - AD 500) *Deptford*	45	6.0	198.6	2.7
Late Woodland (ca. AD 500 - 1000) *St. Johns, Weeden Island, Walthour, Wilmington, Swift Creek*	104	13.9	1,128.4	15.5
Late Woodland/Early Mississippian (ca. AD 900 - 1200) *St. Catherines, UID grog tempered*	149	19.9	1867.8	25.6
Early/Middle Mississippian (ca. AD 1100 - 1400) *Savannah*	100	13.4	762.5	10.5
Late Mississippian (ca. AD 1400 - 1600) *Irene*	12	1.6	52.4	0.7
Late Mississippian/Protohistoric (ca. AD 1600 - 1700) *Altamaha*	39	5.2	237.4	3.3
Total	**749**		**7,295.2**	

Note : Table includes all available prehistoric ceramic identifications from projects taking place at Taylor Fish Camp from 2012 - 2017, including salvage projects for which final reports are not available. A small number of sherds were recovered from features (L. Woodland - M. Mississipppian period) or are semi-provenienced, while the majority are from general levels. See reports, if available, for more specific information regarding proveniences. See Figure 3.4 for general locations and references. Non-diagnostic sand/grit tempered sherds (856 count, 6,015.7 g) are not included.

CHAPTER 4
2018 EXCAVATION, CERAMICS, AND RADIOCARBON DATES: METHODS AND RESULTS

The 2014 Donor Board excavation at Taylor Fish Camp (no report available) revealed intact deposits containing terminal Late Woodland/Early Mississippian period ceramic types and a high concentration of faunal materials. A feature recorded in all three units, between the bottom of a shell midden and relatively sterile subsoil, was described as containing burned shell, large amounts of animal bone, and charcoal. Materials from that provenience were sifted through 1/4-in mesh but still produced a great deal of vertebrate remains. A sample of those remains was analyzed for the current project and are presented in Chapters 5 and 6. The main goal for the current project is to further characterize subsistence practices used during the Late Woodland/Early Mississippian period at Cannon's Point Peninsula, by excavating another sample of the same deposits using fine-meshed screens, to gain a more accurate representation of animal-use at the site. This chapter describes the methods and results of the excavation, ceramic analysis, and radiocarbon dating.

Field and Laboratory Methods

St. Simons Land Trust (SSLT), owners of Cannon's Point Preserve, approved a proposal to excavate a single 1 x 1 m unit immediately adjacent to the location of the previous excavation and the feature described above, currently where a monument recognizing their donors now stands. The unit was placed 25 cm from the Donor Board on its southwest side, (Figure 4.1). To record the location of the unit, and to facilitate future mapping of archaeological resources at Taylor Fish Camp, Georgia Southern University students and Dr. Jared Wood installed two subsurface benchmarks in June of 2018 (Figures 4.2). Each benchmark consists of a 3' long, 4" wide PVC pipe, filled with concrete, capped and sealed, with a surveyor's pin seated in the top cap (Figure 4.3). Geographic coordinates for both benchmarks were acquired with a Leica GPS 1200+ (see Figure 4.3 for UTM coordinates).

Excavations were carried out in March and April of 2018 by the author, along with the assistance of local volunteers and Georgia Southern University graduate and undergraduate

Figure 4.1: 1 x 1 m unit excavated in 2018. Donor Board represents area excavated in 2014 preceding installation of monument (no report available).

Figure 4.2: Taylor Fish Camp Donor Board excavations and benchmarks

Figure 4.3: Taylor Fish Camp Benchmarks. UTM coordinates - zone 17, NAD 83
A1: 467525.121m E, 3458459.998m N
A2: 467548.776m E, 3458444.927m N

students. The unit was excavated in arbitrary, 10 cm levels, primarily using trowels, until reaching at least 10 cm into sterile subsoil. A datum to measure depths was placed in the southwest corner of the unit, 10 cm above the surface. Due to the multi-occupational nature of the site and the possibility of mixed contexts, each level was divided into zones when any cultural strata or discernable differences in the content of the midden were encountered within a level. Features were also excavated separately, photographed, and recorded with plan-view and/or profile sketches. Photographs were taken at the end of every level, and plan-view sketches were drawn at the conclusion of every level, excluding level one. Profile sketches were made of all four walls at the conclusion of the excavation. A 5-liter bulk sample of every level and the fill of a feature was saved for possible flotation at Georgia Southern University.

All materials were water-screened through 1/4-in and 1/16-in mesh and bagged separately. Cultural materials, vertebrate bone, and any other non-shell materials were bagged separately in the field, when visible. Fine-screening methods were used as a result of several previous studies which demonstrated the disadvantage of recovering animal remains using 1/4-in screens (e.g. Grayson 1984; James 1997; Nagaoka 2003; Quitmeyer 2004; Reitz and Wing 2008; Shaffer and Sanchez 1994; Wing and Quitmeyer 1985). The most important bias influencing interpretations of subsistence practices when using larger-sized mesh is the emphasis placed on large animals. This is especially significant at coastal sites where there is an increased possibility of recovering small-sized aquatic animals such as fish, turtles, and numerous

invertebrates. Sixteenth-inch mesh size was chosen to ensure that animal remains of all sizes were given an equal chance of recovery, as identifiable remains, especially those of fishes, can be lost even when using 1/8-in screens (Colley 1990; Stewart and Wigen 2003; Wing and Quitmeyer 1985).

All materials collected from the excavation were transported to Georgia Southern University for sorting and analysis. Materials will be permanently curated at the Coastal Georgia Historical Society (CGHS) on St. Simons Island. After drying, all faunal materials were separated by screen size, 1/4 in. (6.35 mm), 1/8 in. (3.18 mm), and 1/16 in. (1.59 mm), to facilitate easier sorting, identification, and curation. Numerous Georgia Southern University undergraduate and graduate students assisted in screening and sorting the collection by material type. Due to time constraints and the large volume of materials, all faunal remains recovered from the 2018 excavation were not analyzed. A portion of the unanalyzed proveniences were sorted into vertebrate and invertebrate categories according to screen sizes and await future analysis.

All shell recovered from level one was visually scanned for non-shell, weighed, then discarded, due to the mixed contents of the provenience and consideration of curation space. Instead of using the flotation method on the 5-liter bulk samples, they were subjected to the same water-screening strategy used in the field and combined with the appropriate proveniences. The bulk sample removed from a probable posthole feature was floated using the simple bucket method; no botanical remains were recovered and the few faunal remains from the feature were not analyzed for this study.

All ceramic identifications were made by the author, following Thomas (2008), Williams and Thompson (1999), and the Georgia Indian Pottery Site (2005). Relevant type descriptions in those sources originate from Caldwell (1952), Caldwell and McCann (1941), Caldwell and Waring (1939a, 1939b) and Depratter (1991). Identifications of ceramics recovered from Cannon's Point during previous excavations were also used as guides (e.g. Martinez 1975; Milanich 1977; Harris and Honerkamp 2014, 2015; Honerkamp 2015). Temper and surface treatments were the primary characteristics used to identify ceramic types. If a sherd measured less than 15 mm at its widest point, identification was not attempted.

Results

Excavation of the 1 x 1 m test unit at Taylor Fish Camp in 2018 encountered intact, prehistoric shell deposits and five archaeological features, all of which likely originate from the Late Woodland to Middle Mississippian periods. A significant amount of invertebrate and vertebrate remains was recovered from the general levels and features. Results of the faunal analysis from selected proveniences is presented in Chapter 6. This section describes the general characteristics of the midden, the results of ceramic analysis, and the features recorded during the 2018 excavation.

Midden Characteristics. Excavations revealed a shell midden ending as shallow as 16 cm below the surface (cmbs) in the southeast corner of the unit, sloping down to approximately 76 cmbs in the north half of the unit. The first 10 cm contained a dark sandy-loam, mostly crushed shell, and a mix of prehistoric, historic, and modern materials, including unidentifiable metal fragments, a wire nail, window-glass shards, a slug/bullet, small concrete fragments, and assorted modern trash. No historic ceramics were recovered during the excavation. Late Historic and modern materials were likely discarded by the Taylor family, who lived at the site from 1920 to 1971 (Pearson 2014). The disturbed contexts led to the decision to discard all shell recovered from Level 1. Before being discarded, the materials from Level 1 captured in 1/4-in screens were visually scanned in the laboratory for any vertebrate bone or non-shell artifacts.

Cattle bones, including a phalanx and a tooth, were also recovered from Level 1, likely the remains of cattle owned by the Taylor brothers (Pearson 2014). The deepest non-prehistoric artifact was a spark plug recovered at 11 cmbs. The part was made from 1928 to 1931, and was likely used by the Taylor brothers, who parked automobiles and motor boats at the location.

The remainder of the midden contained only prehistoric artifacts, faunal remains, and organic materials. Favorable soil conditions at the site have led to excellent preservation of an assortment of vertebrate and invertebrate remains. Vertebrate bones were less frequent in the upper levels but numerous within the lower levels of the midden and features. Crushed shell fragments and whole bivalves became more dense beyond the uppermost level. The mollusk species making up the bulk of the deposits are common in prehistoric shell middens on the southern Atlantic coast and were recognized during excavation: eastern oyster, hard clam, Atlantic ribbed mussel, and stout tagelus, with smaller amounts of marine gastropods such as whelk and periwinkle.

Evidence of burning was found throughout the midden, especially near the bottom where deposits transition to a relatively sterile, sandy, lighter-brown subsoil. Large and small bits of carbonized wood, charred bone and nuts, discolored soils, burned shell fragments, possible ash, and shell/sand concretions were found within the midden and some features. The excavation ended when sterile subsoils were reached at approximately 80 cmbs.

Ceramics. Nearly all prehistoric ceramics were recovered from the midden's general levels. Only Feature 5 had directly associated sherds (discussed below). The majority of diagnostic ceramic types are associated with Late Woodland and Early/Middle Mississippian periods (Table 4.1). Wilmington and St. Catherines, grog tempered types originating from the Late Woodland and Early Mississippian periods, make up 33% of the assemblage, by count and weight. Savannah pottery types, typically associated with the Early and Middle Mississippian period, account for 20% by count and 30% by weight. The remainder of the assemblage consists of mostly non-diagnostic sand and/or grit tempered sherds.

Six sherds recovered from general levels, all likely from the same vessel (five of them cross-mend), may be Refuge Plain, an Early Woodland period ceramic type, but those identifications are less than certain. If they are Refuge types, the sherds are probably isolated finds and do not represent midden deposits. A single Late Archaic period sherd was also recovered from a pit feature (Feature 5) but was likely unintentionally included in the fill. Fiber-tempered St. Simons types are ubiquitous on Cannon's Point peninsula, but the predominance of Late Woodland/Early Mississippian period ceramics and radiocarbon dates from features and general levels indicate Late Archaic or Early Woodland period faunal remains were not deposited at all, or were minimal, at the location of the 2014 and 2018 Donor Board excavations. The variety of ceramic types recovered during the 2018 excavation again demonstrates the significant, multicomponent, cultural resources present at Taylor Fish Camp and Cannon's Point peninsula (Tables 3.1 and 4.1).

Feature 1. Feature 1 was recognized in the southeast portion of the unit at around 15 cmbs and ended at about 26 cmbs (Figure 4.4). The midden deposit was approximately 80 cm long running north/south, and around 35 cm wide. Characteristics of Feature 1, as expected, were very similar to those of a feature (also named Feature 1) encountered during the previous excavation for the installation of the Donor Board in 2014. The feature from the 2014 excavation was described as undisturbed deposits near the bottom of a midden, containing darker

soil, charcoal, burned shell, and high concentrations of animal bones. Feature 1 from the 2018 excavation shared those characteristics, in addition to a higher concentration of ribbed mussel shell. The two features were separated by less than 1 m, 25 cm of which is unexcavated soil (Figure 4.1). The features were likely connected, representing food remains deposited by Late Woodland period inhabitants to begin the formation of a midden.

No ceramics were directly associated with Feature 1 in the 2018 excavation, but Wilmington, St. Catherines, and Savannah types were recovered from the surrounding levels. A radiocarbon sample from the provenience returned a Late Woodland/Early Mississippian period date range (Table 4.2, sample ID# 05). Diagnostic ceramics associated with the feature recorded in 2014 included Savannah Burnished Plain, with a slightly higher number of grog tempered sherds (Wilmington and/or St. Catherines); a radiocarbon sample from that provenience returned an earlier Late Woodland period date range (Table 4.2, sample ID# 10).

Relatively sterile, sub-midden sand was first reached underneath Feature 1, while midden deposits throughout the rest of the unit sloped to greater depths. The feature likely represents numerous Late Woodland/Early Mississippian period midden deposits on a slightly raised portion of ground. All invertebrate and vertebrate remains were analyzed from Feature 1; results are presented in the following chapter.

Figure 4.4: Feature 1, 2018 Donor Board-2 excavation; left: before excavation, 15cmbs; right: during excavation, 20cmbs; relatively sterile, sub-midden, brown sand is visible underneath Feature 1 on the right.

Feature 2. Feature 2 was a pocket of small depressions in the brown sub-soil at the bottom of the midden in southeast quadrant of the unit, unconnected to Feature 1. The feature contained shell, bone, and charcoal, began at 28 cmbs and ended quickly before 38 cmbs. The feature was irregularly shaped and probably represents incidental inclusions or root-runs. No cultural materials were recovered. Faunal materials recovered from the feature are likely associated with the midden context directly above it.

Feature 3. While excavating near the bottom of the midden in the northwest corner of the unit, a circular area of shell and darker soils became visible (Figures 4.5, 4.6). The feature appeared at approximately 42 cmbs and bottomed-out at 62 cmbs. The feature fill and deposits directly above showed clear signs of burning: large amounts of charcoal, charred/cemented shell, discolored and hardened soils, and possible ash. The deposits directly above, probably associated with the feature, also contained several burned acorn shell and nut-meat fragments. The feature fill was floated at Georgia Southern University using the simple bucket method. It contained mostly crushed shell fragments, little vertebrate bone, and no artifacts. Faunal remains from the feature were not analyzed for this study. Feature 3 is likely an eleventh or twelfth century posthole (Table 4.2, sample ID# 12), intrusive into slightly earlier midden deposits.

Feature 4. Feature 4 was recognized in the south wall at approximately 40 cmbs and ends at 54 cmbs, protruding about 10 cm into the unit (Figure 4.7). The feature shows evidence of burning, consisting mainly of hardened and discolored soil, large chunks of charcoal, charred and cemented shell fragments, and a relatively small amount of vertebrate bone. No artifacts were recovered. The function of the feature remains unclear, as it is buried by sterile sand and appears unconnected to the above midden. It may be the edge of a bell-shaped pit, with the rest of the pit's fill obscured by unexcavated soil. Alternatively, it may be the result of bioturbation, with the rest of a root- or rodent-run out of view.

Feature 5. Feature 5 is a probable refuse pit in the northeast corner of the unit (Figures 4.5, 4.6). Before recognizing the bell-shaped pit feature, midden deposits had begun sloping towards the north and west sides of the unit, especially towards the northeast corner where the shell was most dense, while we were encountering relatively sterile sand in the south and east sides. The feature extended approximately 30 cm below the deepest midden deposits, beginning at approximately 50 cmbs and ending at 80 cmbs. The pit was only partially excavated, as

Figure 4.5: Features 3 and 5, plan view, 2018 Donor Board-2 excavation.

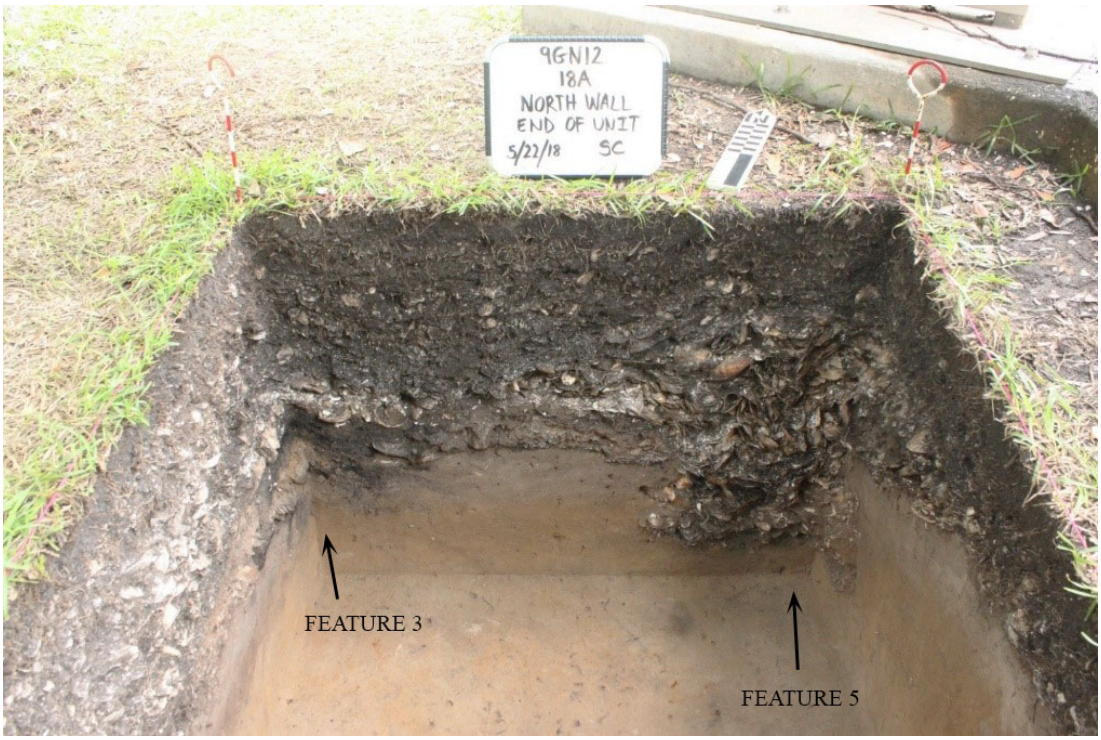


Figure 4.6: Features 3 and 5, profile view, 2018 Donor Board-2 excavation.

Figure 4.7: Feature 4, 2018 Donor Board-2 excavation.

deposits are still intact beyond the north and east walls of the unit. The excavated materials contained mostly whole shell, little soil, and less evidence for burning than the rest of the midden. Surprisingly few vertebrate bone fragments were recovered from the feature. Faunal materials were not analyzed for this study, but it is evident that the feature holds a high proportion of stout tagelus compared to general midden levels

A single chert flake, the only lithic artifact recovered during the excavation, was found in the otherwise sterile soils within 20 cm of the pit and may be associated with the feature. A single Late Archaic period sherd was recovered from within the pit but was probably inadvertently included in the fill. Several sand-tempered plain sherds, which may be from the Savannah series, were also removed from the feature. A charcoal sample from the pit was radiocarbon tested, returning a narrow date range within the Middle Mississippian period (Table 4.2, sample ID# 04).

Radiocarbon Dating

Three members of CGHS provided funding to radiocarbon date 13 samples recovered from Taylor Fish Camp. Objectives for radiocarbon dating are to investigate the temporal components of the site, the chronology of prehistoric ceramic types found on the island, and animal-use by Native American occupants, by testing materials from the current study and two previous excavations. The samples were tested using accelerator mass spectrometry by the Center for Applied Isotope Studies at the University of Georgia. More than one sample was chosen from the same or similar proveniences to reduce the risk of relying on a single, potentially inaccurate date, and to better understand the amount of mixing and disturbance which has taken place at the multicomponent site.

A sample of charcoal recovered from a feature during the 2014 Donor Board excavation was chosen to date the intact midden deposits, including a sample of faunal materials recovered from that context, which was analyzed as part of the current study. Though excavated using 1/4-in screens, the provenience produced a significant amount of vertebrate remains, a large portion of which remain unanalyzed. A charred acorn fragment from a probable posthole, also collected during the 2014 excavation, was tested to date the occupation of a structure and associated grog tempered sherds.

Excavations in 2016 preceding the construction of a restroom facility encountered a large, shell-filled pit (Figure 4.8). Two charcoal samples from that provenience were tested to date the associated Savannah ceramic types and to further understand when the site was most heavily occupied. The provenience was not fully excavated; a small portion of the feature remains intact. Another feature from the 2016 excavation was recorded as a probable fire-pit (Figure 4.9). It contained large St. Catherines sherds, mammal bones, and charcoal. A charcoal sample and a fragment of a white-tailed deer tibia were radiocarbon tested from that provenience, to better understand the chronology of the ceramics associated with the Late Woodland and Early Mississippian periods, and to date the faunal remains from the feature. Those faunal materials, collected with 1/4-in screens, were analyzed for the current study and are discussed in Chapter 6.

The remaining seven samples submitted for radiocarbon dating were recovered from the 1 x 1 m unit excavated for the current study. Charred acorn fragments or pieces of charcoal from

Figure 4.8: Feature 18A, 2016 Restroom Facility excavation.

Figure 4.9: White-tailed deer tibia in Feature 7A, 2016 Restroom Facility excavation. Ceramic sherds are St. Catherine's Plain and Net-marked.

five different locations between levels two and five were tested to determine the chronological sequence of midden deposits and its associated ceramic types (mainly Wilmington, St. Catherines, and Savannah types) and to assign temporal boundaries for the subsistence practices evident by the faunal remains. Two of those samples were charcoal bits removed from two separate proveniences near the bottom the midden, recovered among high concentrations of charred materials and animal bone. All faunal remains from those two proveniences were analyzed for the current study.

A charred acorn recovered from a probable posthole was also selected for testing. Characteristics of the feature were similar to the posthole encountered during the 2014 Donor Board excavation, mentioned above. A similar result from radiocarbon dating an additional posthole feature adjacent to the other could provide a reliable date-range for the use of a structure and the cooking of acorns. The last sample chosen was a piece of charcoal recovered from near the bottom of a shell-filled pit, to compare with the results from the similar shell-pit encountered during the 2016 Restroom excavation. Both features were similar in size, contained Savannah sherds, remain partially intact for future research, and could provide corroborating evidence for settlement of the site.

Results. Results from 13 samples tested by the University of Georgia's Center for Applied Isotope Studies are presented in Table 4.2 (see Appendix B for original results). All date-ranges fall between the Late Woodland and Middle Mississippian periods, supporting the ceramic types identified from proveniences with directly associated sherds. The more recent dates were recovered from shell-pit features (Table 4.2, sample ID# 1, 2, and 4) and probable postholes (Table 4.2, sample ID# 12 and 13), dating to the Early and Middle Mississippian periods. Samples recovered from general levels (Table 4.2, sample ID# 3, 5, 6, 9, 10, and 11) indicate the midden materials were deposited slightly earlier, from the Late Woodland into the Early Mississippian period.

Charcoal samples from two pit features (Table 4.2, Sample ID# 1, 2, and 4), separated by approximately 103 m, returned very similar date ranges, indicating the probable refuse-pits were likely used by the same group of twelfth- or thirteenth-century residents. Both shell features extended underneath general midden deposits and were only partially excavated, leaving open the possibility for further research. The pit feature from the 2016 excavation (Table 4.2, Sample ID# 1 and 2) was screened using 1/4-in mesh. Vertebrate bone from the provenience is curated

at Coastal Georgia Historical Society (CGHS) and has not been analyzed. Ceramic sherds from the feature were identified for this study; diagnostic types are St. Simons Plain and Savannah Check Stamped, suggesting the feature fill dated to the Middle Mississippian period. Results from radiocarbon testing support the Savannah pottery and indicate that the Late Archaic period sherds were likely incidental inclusions.

Charred nuts from two probable posthole features returned nearly identical date ranges (Table 4.2, Sample ID# 12 and 13), possibly representing the same Early Mississippian period structure. The features are less than 1.5 m from each other and extend to similar depths below the midden, with large amounts of charcoal and burned shell within and near the fill. The posthole feature recorded during the 2014 excavation held one sand-tempered plain sherd and two grog-tempered, possibly a Wilmington type. The probable posthole recorded during the 2018 excavation for this study did not have directly associated ceramics.

Two samples from another pit feature recorded during the 2016 Restroom excavation produced Late Woodland (Table 4.2, Sample ID# 7) and Early Mississippian period (Table 4.2, Sample ID# 8) date-ranges. The possible discrepancy of several centuries between those results may be a result of the types of materials tested. A charcoal sample returned the earlier date-range, while a collagen sample from a white-tailed deer tibia produced the more recent date-range. Deer are known to eat marsh grasses, but the Marine Reservoir Effect would lead to radiocarbon testing of marine animals, or animals that consume marine organisms, to appear older than their actual radiocarbon age. It is more likely that the date-range produced by the deer tibia is closer to the actual age of the feature. The charcoal associated with the feature, potentially a fire-pit since the shallow feature also contained charred shell and bone, was possibly gathered from a dead tree, producing a slightly older radiocarbon age. Additionally, the pit-feature contained large St. Catherines Plain and Net-Marked sherds, typically associated with the Late Woodland and Early Mississippian period dates produced by the deer tibia.

General levels from the 2014 and 2018 excavation contained mostly Wilmington, St. Catherines, and Savannah ceramic types, with radiocarbon testing indicating midden formation occurred mostly during the tenth, eleventh, and twelfth centuries. Faunal materials analyzed for this study were recovered from two distinct bone, shell, and charcoal concentrations near the bottom of the midden. Radiocarbon testing of charcoal from those proveniences indicate that

they represent Late Woodland and Early Mississippian period animal remains (Table 4.2, Sample ID# 3, 5, and 10).

Table 4.1: Ceramics – 2018 Donor Board-2 Excavation					
Type	**Count**	**%**	**Weight (g)**	**%**	**Time Period**
St. Simons Plain	1	0.9	23.3	5.2	Late Archaic
Refuge Plain	6	5.4	47.8	10.6	Early Woodland
Wilmington Check Stamped	1	0.9	4.0	0.9	Late Woodland
Wilmington Plain	9	8.1	42.4	9.4	Late Woodland
Wilmington Simple Stamped	1	0.9	9.9	2.2	Late Woodland
St. Catherines Plain	5	4.5	37.4	8.3	L. Woodland/E. Miss.
St. Catherine's Burnished Plain	5	4.5	17.5	3.9	L. Woodland/E. Miss.
Grog tempered UID[a]	14	12.6	37.5	8.3	L. Woodland/E. Miss.
Savannah Complicated Stamped	2	1.8	25.4	5.7	Early/Middle Mississippian
Savannah Plain	13	11.7	66.3	14.8	Early/Middle Mississippian
Savannah Burnished Plain	7	6.3	43.4	9.7	Early/Middle Mississippian
Sand/grit tempered UID	47	42.3	94.5	21.0	
(non-diagnostic)					
Total	**111**		**449.4**		
[a]UID = Unidentified					

Table 4.2: Radiocarbon Dates from Taylor Fish Camp (9GN12).						
Sample ID#	**UGAMS#**	**Provenience, Project**	**Material**	**^{14}C Yrs. B.P ± σ**	**δ^{13}C,‰**	**Calibrated A.D. Yrs. (2σ)**
01	38640	Pit feature 18, 2016 (FS 67; 16A)	charcoal	840 ± 20	-28.17	1164-1249
02	38641	Pit feature 18, 2016 (FS 67; 16A)	charcoal	720 ± 20	-26.77	1264-1291
04	38643	Pit feature 05, 2018 (FS 30; 18A)	charcoal	730 ± 20	-24.24	1261-1288
08	38647	Pit feature 07, 2016 (FS 21; 16A)	deer bone	920 ± 20	-20.60	1038-1161
07	38646	Pit feature 07, 2016 (FS 21; 16A)	charcoal	1210 ± 20	-25.14	726-737 (p=.04)
						768-885 (p=.96)
12	38651	Probable posthole/Feature 03, 2018 (FS 25; 18A)	nut	880 ± 20	-26.25	1049-1084 (p=.19)
						1124-1136 (p=.04)
						1150-1217 (p=.77)
13	38652	Probable posthole/Feature 02, 2014 (FS 44; 14G)	nut	890 ± 20	-25.32	1045-1093 (p=.35)
						1120-1140 (p=.09)
						1147-1213 (p=.56)
11	38650	Level 2, 2018 (FS 03; 18A)	nut	940 ± 20	-23.74	1031-1059 (p=.22)
						1063-1154 (p=.78)
06	38645	Level 3, 2018 (FS 09; 18A)	charcoal	1040 ± 20	-23.59	978-1023
09	38648	Level 4, 2018 (FS 18; 18A	nut	960 ± 20	-27.12	1021-1054 (p=.34)
						1077-1153 (p=.66)
03	38642	Midden deposit/Level 5, 2018 (FS21A; 18A)	charcoal	1070 ± 20	-25.88	900-922 (p=.15)
						948-1018 (p=.85)
05	38644	Midden deposit/Feature 01, 2018 (FS 05; 18A)	charcoal	1080 ± 20	-26.98	897-925 (p=.25)
						943-1015 (p=.75)
10	38649	Midden deposit/Feature 01, 2014 (FS 22; 14G)	charcoal	1230 ± 20	-26.85	693-747 (p=.35)
						763-781 (p=.16)
						787-878 (p=.49)

Note : Project codes used by Coastal Georgia Historical Society are in parentheses following the FS#; 14A: Donor Board-1, 2014; 16A: Restroom Facility, 2016; 18A: Donor Board-2, 2018. Calibration curve by Calib 7.1.0 (Reimer et al. 2013; Stuiver and Reimer 1993; see Appendix B).

CHAPTER 5
FAUNAL ANALYSIS: METHODS AND RESULTS

The animal remains analyzed for this study were recovered from three projects at Taylor Fish Camp (Donor Board-2 in 2018, Donor Board-1 in 2014, Restroom Facility in 2016). Because of the differences in screen-sizes used during the projects, and differences in deposit types (general-level midden deposits and a pit feature), results of faunal analyses from the three projects are described separately. This chapter will describe the proveniences chosen for analysis and zooarchaeological methods used for identification and quantification. Results are then presented, with emphasis on the fine-screened sample collected during the 2018 excavation designed for this study.

Proveniences Analyzed

2018 Donor Board-2, Midden Deposits. Two proveniences from the excavation designed for this study were selected for faunal analysis. The first (Feature 1, FS 05), designated a feature as a result of its unique characteristics compared to surrounding midden material (Figure 4.4), was expected to be encountered based on a similar feature described during the previous project at the location (Feature 1, 2014 Donor Board-1 excavation). Both features were relatively thin layers near the bottom of the shell midden, containing dense shell, and high concentrations of vertebrate bone, burned shell, and charcoal. The shared characteristics of the 2014 and 2018 proveniences and close proximity (less than 1 m apart) indicate they are possibly connected and may represent the same context. No diagnostic ceramics were recovered directly from the provenience during the 2018 excavation, but ceramics (Wilmington, St. Catherines, Savannah) in the corresponding levels in which the feature was recorded indicate Late Woodland/Early Mississippian period deposits. A radiocarbon sample from the provenience suggests the materials were discarded during the tenth-century (Table 4.2; Sample ID# 05).

The second provenience chosen for analysis from the 2018 excavation (FS 21A) was also a concentration of vertebrate bone and charcoal near the bottom of the shell midden. The deposits were not designated a feature but are similar to the first provenience chosen for analysis, likely representing a midden zone deposited by Late Woodland/Early Mississippian period residents. Ceramics (cf. Savannah) in the corresponding level are associated with the Early

Mississippian period, and a radiocarbon sample from the provenience suggests a tenth-century deposit (Table 4.2; Sample ID# 03). Both proveniences are therefore combined and presented as a single analytical unit. All invertebrate and vertebrate remains were analyzed.

2014 Donor Board-1, Midden Deposits. Excavations preceding installation of the Donor Board at Taylor Fish Camp in 2014 recovered dense shell, bone, and charcoal deposits, less than 1 m in distance from the analyzed materials recovered in 2018 and described above. The provenience was recorded as a zone within a larger context of undisturbed deposits near the bottom of the shell midden (Feature 1, FS 21), which contained mostly Late Woodland and Early Mississippian pottery types. A radiocarbon sample removed from the provenience returned a ca. AD 700 – 900 date range (Table 4.2; Sample ID# 10). All materials were screened with 1/4-in mesh. Invertebrate remains were not retained for analysis. Although results are not quantifiably combined with the 1/16-in materials, analysis of additional vertebrate remains will contribute to a more accurate overall picture of general subsistence strategies and animal-use at the site.

2016 Restroom Facility, Pit Feature. Excavations preceding construction of a restroom facility in 2016 recorded a shallow pit-feature (Feature 7A, FS 26) at the bottom of a shell midden, approximately 110 m southeast of the 2014 and 2018 excavations at the Donor Board. The shallow depression contained St. Catherines sherds and large mammal bones which appear to have been discarded simultaneously (Figure 4.9). Radiocarbon samples from the feature returned Late Woodland/Early Mississippian date ranges (Table 4.2, Sample ID# 07, 08). All vertebrate remains, screened with 1/4-in mesh, were analyzed. No invertebrate remains were analyzed from the feature. The feature may be evidence of a single event, presenting an opportunity to investigate possible exceptions to general animal-use at the location, as the feature may represent subsistence behavior not evident in general midden refuse.

Zooarchaeological Methods

Identification, analysis, and quantification of faunal remains followed quality assurance standards and guidelines developed by Driver (1992, 2011), Wolverton (2012), and Reitz and Wing (2008). Specimens were identified by element, portion, side, and taxonomic classification. If observed, evidence of age at death, sex, seasonality, and modifications were recorded. Faunal identifications were made using Georgia Southern University's comparative collection, along with loans provided by Georgia Museum of Natural History Zooarchaeology Laboratory and the

North Carolina Museum of Natural Sciences. Sources consulted for aid in identification of turtle specimens include Reitz and Wing (2008) and Sobolik and Steele (1996). Sources consulted for aid in identification of fish specimens, and especially helpful for sea catfishes (Ariidae), include Mundell (1975), Lundberg and Luckenbill (2006), and Tercerie et al. (2016).

Key sources consulted to compile a list of animal species likely to occur around northern St. Simons Island include Carpenter (2002a, 2002b, 2002c), Kells and Carpenter (2011), Robins and Ray (1986), and Warren et al. (2000). The list of possible species was used only as a guide during the identification process, as modern animal ranges do not necessarily reflect distributions in the past.

Taxonomic nomenclature and common names follow Turgeon et al. (1998 [mollusks]), McLaughlin et al. (2005 [decapod crustaceans]), Page et al. (2013 [fishes]), Crother (2012 [amphibians and reptiles]), the American Ornithologists' Union (AOU 1998 [birds]), and Wilson and Reeder (2005 [mammals]). Open nomenclature (e.g. cf., sp., spp.) is used only when a specimen cannot be identified with complete certainty, following the recommendations of the Palaeontological Association (PalAss 2014) as put forth by Bengtson (1988). The "cf." before a taxonomic classification indicates the identification is provisional. The "sp." designation after a genus indicates a specimen could not be identified to species, or identification to species was not attempted because comparative materials were not available. The "spp." after a genus also indicates that a specimen could not be identified to species, but more than one specimen was identified in that category and therefore it is possible that more than one species is represented.

Relative abundance for each taxon is expressed in terms of Number of Identified Specimens (NISP), specimen weight, Minimum Number of Individuals (MNI), and biomass. NISP is a simple count of specimens identified in each category (cross-mends are counted as a single specimen). Specimen weight for each taxonomic category was measured using a digital scale to the nearest 0.01g.

MNI refers to the lowest number of individuals needed to account for every specimen in a collection. It is calculated based on symmetry, size, portion, and age of each element. MNI is usually estimated at the species level, but is occasionally estimated at a higher taxonomic level, such as genus, family, or order. MNI can be estimated conservatively by aggregating analytical units and, or by the "maximum distinction method," which separates analytical units and typically results in a much higher MNI (Grayson 1983). The more conservative method is used

for faunal materials from the 2018 Donor Board-2 excavations, with the two proveniences combined for analysis and MNI estimated for the assemblage as a whole. The materials from the Donor Board-1 and Restroom Facility are not combined and represent separate analytical units.

Biomass is a measure of dietary contribution from each taxon, calculated by entering specimen weight into allometric formulae following Reitz and Wing (2008:234-246), Reitz and Quitmeyer (1988), Reitz and Cordier (1983), and Wing and Brown (1979). Biomass predictions rely on the premise that a proportional relationship exists between skeletal dimensions, skeletal weight and body weight (Reitz and Wing 2008:234-246; Reitz and Quitmeyer 1988). See Appendix C for the allometric formulae used in this report.

Richness, diversity, and equitability estimates are calculated to examine the degree of specialization in targeted species and diet. Richness is the total number of taxa in the assemblage (including only the taxa for which MNI was estimated). Diversity is a measure of the relative importance of animals present in the assemblage, taking into account both richness and equitability. Diversity is measured with the Shannon-Weaver Index, calculated using the formula:

$$H' = -\Sigma\,(p_i)\,(\mathrm{Log}_e\, p_i)$$

where *pi* is the number of the *i*th species, divided by the sample size (Shannon and Weaver 1949:14). The diversity index ranges from zero, the least diverse value, to five, the most diverse value. Diversity increases as the number of species and equitability increases. Equitability measures the level of evenness with which the animals were used and is calculated using the Sheldon scale:

$$V' = H' / \mathrm{Log}\, S$$

where H' is the diversity index and *log S* is the natural log of the number of observed species, or richness (Sheldon 1969). The equitability scale provides a range of values between zero and one, where a number closer to zero indicates preference for one or more species, and an equitability number of one representing equal use of every taxa identified in an assemblage. For this study, MNI is used in both formulas to examine the frequency of species utilized, while biomass is used in both formulas to examine how those choices resulted in diet contributions. Commensal taxa (non-food remains) are not included in calculations of richness, diversity, or equitability.

Modifications can reveal site formation processes, butchering methods, and cooking techniques. Typical modification categories are cut, worked, burned, calcined, and pathological (Reitz and Wing 2008:123-132, 153-182). All specimens were examined for modifications and are noted where observed.

Many sources of bias can influence the interpretation of faunal remains. Most notable for this report are potential biases from sample size and insufficient recovery techniques. Sample size is widely known to affect primary and secondary data, including measures of relative abundance and richness (Reitz and Wing 2008:113-114, 157, 180, 182-243 ; Grayson 1984; Lyman 2008). Due to time constraints, not all excavated faunal remains could be analyzed; identified materials may not be fully representative of the entire suite of animals used at the site. For example, species not identified during this study (e.g. gar, shark) were noticed in small amounts among the unanalyzed materials.

The locations on the site where the excavations took place are a related source of potential bias. When examining subsistence patterns of a site's inhabitants, the context from which faunal remains were recovered are assumed to represent typical animal-use. That type of analysis must consider the possibility that the materials may represent only a portion of a subsistence pattern, such as a specialized or seasonal activity. The materials analyzed for this report were recovered from four proveniences at two locations at Taylor Fish Camp but may not represent the entire animal-use strategy and disposal methods at the site. Results could be biased by the fact that the materials originated from small portions of a large site and may not be representative of all subsistence activities.

Another source of potential bias is recovery technique, particularly the use of 1/4-in sifting screens, discussed above. The use of 1/16-in screens during the excavation planned for this study alleviates a significant source of bias, but the use of 1/4-in screens during previous excavations at Taylor Fish Camp site certainly led to the loss of a large amount of animal bones, particularly fish. Two proveniences from those excavations were analyzed for this study; screen size undoubtedly influenced all measures of relative abundance among those samples.

Differential preservation is another source of potential bias. Several factors can cause certain elements to survive better than others (Reitz and Wing 2008:203). For example, smaller bones with less structural density often do not survive as well as larger, denser bones, potentially leading to over-representation of animals with larger, less-fragile bones (Lyman 1994: 235-236).

In addition, gnawing and burning of bone, both of which are present in this assemblage, could have contributed to a loss of materials (Lyman 1994:193-195; Reitz and Wing 2008:132).

Biases inherent in measures of relative abundance also influence the interpretation of subsistence patterns and likely influenced the interpretation of this sample (Lyman 2008; Reitz and Wing 2008:153-250). Finally, the identification of faunal remains involves some amount of subjectivity, and depends heavily on the abilities of the researcher and the quality of the comparative collection (Driver 1992; Gobalet 2001; Wolverton 2013). All field and laboratory techniques are described above to lessen the effect of these issues.

Results: 2018 Donor Board-2, Midden Deposits

The fine-screened sample excavated in 2018 consists of 28 invertebrate and vertebrate taxa, including 30,647 specimens weighing 2,455 grams, representing at least 494 individuals (Table 5.1). The sample consists of almost entirely the remains of aquatic animals. A high volume of faunal materials is well-preserved at the location, but much of the shell and bone is highly fragmented, probably a result of trampling after continued prehistoric, historic, and modern use of the site. Other factors possibly contributing to fragmentation of faunal materials are taphonomic processes such as food-processing methods, weathering, and excavation by archaeologists. As discussed above, the sample combines two proveniences; for a list of individual specimens identified from each provenience, see Appendices D and E.

Vertebrates. Eighteen vertebrate taxa representing at least 52 individuals and weighing 72 grams were identified (Table 5.1). Vertebrate animal remains in the sample are overwhelmingly from fishes and aquatic turtles. A single bird (Aves) and frog/toad (Anura) specimen represent the only potentially terrestrial taxa. No mammal remains were identified in the sample. The frog or toad specimen could not be identified beyond order and is the only vertebrate taxon from the assemblage considered commensal. It is possible that the amphibian was consumed, but considering the specimen's small size, and the occurrence of frogs and toads around the site's environment, a conservative assumption is that it was inadvertently buried along with the intentionally deposited food remains. Vertebrate food remains provide 19% of the specimens to the sample, 10% of individuals, and a significant 67% of estimated biomass (Table 5.2).

Fishes are dominant over turtles by all measures, contributing 98% of the vertebrate specimens, 96% of individuals, 70% of bone weight, and 72% of estimated biomass (Table 5.2). Fifteen of the 18 vertebrate taxa are fishes, all of which frequent the shallow-water estuarine environment surrounding Taylor Fish Camp. No species which prefer the freshwater of rivers or lakes, nor fishes that consistently inhabit deeper offshore waters were identified. Eight fish families are represented, with drums (Sciaenidae), sea catfishes (Ariidae), mullets (Mugilidae), and killifishes (Fundulidae) most prominent (Table 5.3).

Two sea catfish species are present, the hardhead catfish (*Ariopsis felis*) and the gaftopsail catfish (*Bagre marinus*). Sea catfishes are the most abundant fish family in terms of bone weight (78%) and biomass (62%), with only killifish contributing more specimens (Table 5.3). Sea catfishes also account for more biomass (19%) than any other invertebrate or vertebrate taxon in the sample (Table 5.1). A minimum of only three individuals are represented, an unexpectedly low proportion (6%) of MNI among fishes. The gaftopsail catfish is more abundant than the hardhead catfish by all measures (Table 5.1). Both species inhabit muddy bottoms in the upper, middle, and lower reaches of estuaries, and sometimes occur in deeper waters and off beaches (Acero 2002; Dahlberg 1972, 1975:42-43). The hardhead catfish can tolerate waters with lower salinity levels, occasionally entering freshwater, and conversely the gaftopsail catfish prefers more saline environments (Acero 2002). Most sea catfishes move offshore during the colder months seeking warmer water to spawn, leaving smaller numbers available in estuaries during the winter (Dahlberg 1972, 1975:42-43).

Of the fifteen fish species present in the sample, seven belong to the drum family: seatrouts/weakfishes (*Cynoscion* spp.), silver perch (*Bairdiella chrysoura*), red drum (*Sciaenops ocellatus*), black drum (*Pogonias cromis*), star drum (*Stellifer lanceolatus*), spot (*Leiostomus xanthurus*), and croaker (*Micropogonias undulatas*). The drums are fairly evenly represented, with silver perch and croakers each represented by a minimum of two individuals, while the other drums are represented by a single individual. The seatrouts/weakfishes contribute more bone weight, biomass, and identified specimens than other drum species (Table 5.1), probably a result of the distinct and easier to identify vertebrae belonging to members of the genus. It is probable that a large portion of the specimens identified as ray-finned fishes (Actinopterygii), especially the numerous vertebrae, belong to members of the drum family, but identifications to more specific taxonomic categories could not be made due to skeletal similarities with less-

common fish families which inhabit the region. Drums account for 21% of fish specimens identified, 18% of individuals, 10% of weight, and 20% of biomass from fishes, but the family is probably more abundant in the sample than these proportions suggest. The majority of drum specimens identified belong to small-sized individuals.

The drum family is associated with muddy and sandy bottoms in coastal zones and may be the most abundant fish family in Georgia estuaries (Dahlberg 1972, 1975:69). The drum species represented in the sample can inhabit upper, middle, and lower reaches of an estuary, and occasionally enter freshwater environments, particularly the silver perch (Chao 2002; Dahlberg 1972, 1975:70). All seven species present in the sample can also occur on beaches, especially larger-sized black and red drum (Chao 2002; Dahlberg 1972). Silver perch, seatrouts/weakfishes, spot, croaker, and star drum largely move out of the estuaries during the colder months to spawn in warmer offshore waters, making the capture of these species during winter less-likely (Chao 2002; Dahlberg 1972).

Mullets are the most abundant in the sample in terms of vertebrate individuals (35%). The minimum 18 individuals represented are relatively small-sized fishes and contribute much less estimated biomass than the sea catfishes and drums (Table 5.3). Two mullet species frequently inhabit the coastal region: the white mullet (*Mugil curema*) and the striped mullet (*M. cephalus*). A third species in the mullet family, the mountain mullet (*Agonostomus monticola*), is a rare occurrence in the region, usually inhabiting freshwater streams but possibly spawning in the lower reaches of rivers or in offshore waters (Harrison 2002; Matamoros et al. 2009). Mountain mullet have been recorded in north Florida, inland Georgia, and in offshore waters of Georgia (Harrison 2002; Matamoros et al. 2009). Comparative skeletal materials for the mountain mullet were not available for this study. The fish remains present in the Taylor Fish Camp assemblage very likely represent the *Mugil* genus, but the mountain mullet cannot be ruled out, hence the cf. designation. Additionally, the two *Mugil* species are skeletally similar, preventing identifications beyond genus (*Mugil* sp.).

The striped mullet and white mullet can be found widespread throughout nearshore and estuarine environments, often schooling in shallow water near the surface (Harrison 2002; Dahlberg 1972, 1975:76). The striped mullet is more abundant than the white mullet and can tolerate lower levels of salinity, occasionally moving into inland rivers (Harrison 2002; Dahlberg

1972). Both species are less abundant during the colder months, especially the white mullet, which is nearly absent in the estuaries from January through March (Dahlberg 1972).

The highest number of specimens identified among all fishes (30%) belong to killifishes (Table 5.3). A minimum of 11 individuals are represented, but given the relatively small size of killifishes, the taxon contributes a small proportion of biomass (Table 5.3). The specimens present in the sample are likely from the *Fundulus* genus, but more specific identifications beyond family (Fundulidae) were not possible. Several species from the killifish family (Fundulidae) can be found in the region. Four *Fundulus* species inhabit coastal estuaries and salt marshes: marsh killifish (*F. confluentus*), mummichog (*F. heteroclitus*), spotfin killifish (*Fundulus luciae*) and striped killifish (*F. majalis*; Dahlberg 1972, 1975:48-50; Ghedotti 2002). Several more *Fundulus* species are possible in the region, but in freshwater environments and at considerable distances from Taylor Fish Camp (Ghedotti 2002; Warren 2000). Two species from the *Luciana* genus are also possible in the area. Rainwater killifish (*L. parva*) are a less-common occurrence in the brackish waters of coastal Georgia (Ghedotti 2002; Warren 2000), and the bluefin killifish (*L. goodei*) has been recorded at a lake on nearby Sapelo Island (Dahlberg 1972). While a lack of comparative materials prevented ruling out other species, the killifish specimens are probably the remains of the mummichog or striped killifish, the more abundant *Fundulus* species in Georgia's estuaries (Abraham 1985; Dahlberg 1972; 1975:48-50).

Killifishes are highly adaptable to a wide range of salinity and temperature but are found almost exclusively in shallow water habitats (Abraham 1985; Dahlberg 1972, 1975:48-50; Ghedotti 2002). *Fundulus* species are common in the shallow waters of the high marsh, tidal creeks, and tidal pools throughout the year (Dahlberg 1972; Ghedotti 2002). Mummichogs prefer vegetated environments and sometimes swim in schools of several hundred individuals (Abraham 1985). Mummichogs also have small ranges throughout their lifecycle and often burrow into the mud during the colder months (Abraham 1985). Striped killifishes have less tolerance for low salinity levels and can inhabit waters only a few centimeters in depth (Abraham 1985).

A minimum of four individual herrings (Clupeidae) were identified by their distinctive vertebrae. Members of the family are relatively small-bodied fishes and therefore contributed little biomass to the sample (Table 5.1). Several species of herrings, shads, and menhadens belonging to the family can occur in coastal environments. Shads in the *Alosa* genus are

anadromous, moving from offshore waters to freshwater to spawn, typically during late winter and spring depending on the species (Dahlberg 1972, 1975:36-39; Munroe and Nizinksi 2002). Adult American shad (*A. sapidissima*) usually enter the Altamaha River in March then exit in May, though juveniles may remain in the estuary all year (Dahlberg 1972). Menhadens (*Brevoortia* sp.) are common in a variety of habitats around Georgia's coast, often forming large schools in the brackish waters of the upper estuary or around the lower reaches and beaches (Dahlberg 1972, 1975; Munroe and Nizinksi 2002). Some menhadens may reside year-round in the estuaries but are less-common during the winter, as many vacate the shallow waters seeking warmer offshore waters (Dahlberg 1972; Nizinski 2002). Limited comparative materials for this study did not allow identification beyond the herring family.

Two flounder (Pleuronectiformes) individuals are represented, contributing four percent of estimated biomass from fishes. Two families, left-eyed flounders (Bothidae) and sand flounders (Paralichthyidae), inhabit coastal Georgia but a lack of comparative materials did not allow for identification beyond order. Both families consist of several bottom-dwelling species which burrow into sand or mud to ambush their prey from below. Most of these flatfishes are more common in the middle and lower reaches of estuaries throughout the year, while some species may move according to seasons (Dahlberg 1972, 1975:92-96).

A single sheepshead (*Archosargus probatocephalus*) individual is represented by its larger, distinctive vertebrae. Sheepshead belong to the porgy family (Sparidae), a large group of coastal fishes, a few of which can be found in estuarine environments (Carpenter 2002). Additional bone specimens were identified as belonging to the porgy family, but a more specific taxonomic category was not possible. It is probable the porgy specimens are pinfish (*Lagodon rhomboides*) which have been recorded in multiple locations in Georgia's estuaries (Dahlberg 1975:74), or sheepshead, an abundant fish also found in several habitats along the coast (Dahlberg 1972). Sheepshead are associated with rocky or hard-bottom areas around the lower estuary, beaches, and brackish areas of the high marsh and upper reaches (Carpenter 2002; Dahlberg 1972).

The last group of fishes represented is rays (Myliobatiformes). Four specimens represent a minimum of one individual but contribute more fish biomass than porgies and herrings (Table 5.3). Rays are cartilaginous bottom-dwellers which inhabit coastal areas throughout the year, though some species are more sensitive to salinity and temperature (Dahlberg 1972: 1975:28-31;

McEachran 2002). The specimens identified are likely whiptail stingrays (Dasyatidae), but identification could not be certain. Species in the whiptail stingray family are common in the middle and lower reaches of Georgia estuaries (Dahlberg 1972, 1975:29).

Turtles are represented by a single family, the pond turtles (Emydidae). Diamondback terrapin (*Malaclemys terrapin*) is the only species which could be identified, representing a single individual and contributing 12% of estimated biomass to the faunal sample (Table 5.1). Additional pond turtle specimens were identified but similarity in skeletal anatomies did not permit identification to a genus or species. A larger number of turtle specimens were recognized, mainly fragments of limb bones and turtle shell, but could not be identified to a more specific taxonomic category than order (Testudines). All turtle specimens together provide 19% of biomass to the sample (Table 5.2).

Most pond turtles which occur in the region prefer freshwater habitats, though two species of cooters (*Pseudemys* sp.) can be found in brackish habitats (Conant and Collins 1998; Savannah River Ecology Laboratory 1998). Diamondback terrapins prefer the brackish habitats of coastal estuaries and are most common in shallow bays and salt marshes (Conant and Collins 1998; Savannah River Ecology Laboratory 1998). Diamondback terrapins spend most of their lives in the water, but typically leave the water to lay eggs sometime between March and June, during mating and nesting season (Savannah River Ecology Laboratory 1998). A non-aquatic box turtle (*Terrapene carolina*) in the pond turtle family does occur on St. Simons Island, but since none was identified in the sample, all Emydid specimens are considered aquatic resources.

Birds are represented by a single specimen, adding a negligible amount of biomass to the sample (Table 5.1). Numerous bird species occur in the region but identification beyond class was not possible. Herons, egrets, and ibis (Ciconiformes), ducks (Anatidae), and several other species of resident and migratory birds use the aquatic habitats of Georgia's estuaries (Hammel 1992; Johnson et al. 1974).

Invertebrates. Ten invertebrate taxa representing at least 442 individuals and weighing 2,382.98 grams were identified (Table 5.1). Invertebrates dominate the faunal sample by weight (97%) and number of individuals (91%), but a large portion of the individuals are commensal taxa (56% non-food remains). Barnacles (Cirripedia), impressed odostomes (*Boonea impressa*), indeterminate snails (Gastropoda), and land snails (Stylommatophora) are all of diminutive size and are not considered food remains. Land snails are terrestrial animals that were buried along

with the food remains, while the other commensals were likely to have been accidentally collected along with the targeted shellfish. In the interest of time, identification of land snails beyond taxonomic order (Stylommatophora), very small marine snails beyond class (Gastropoda), and barnacles beyond infraclass (Cirripedia), was not attempted. The remaining six invertebrate taxa, four bivalves and two gastropods, are food remains and are discussed below. When including only food remains, invertebrate taxa contribute 209 (42%) individuals and 609 grams (33%) of estimated biomass to the sample (Table 5.2).

A total of 24,105 invertebrate specimens for all taxonomic categories was calculated (79% of the sample) from the 1/4-in and 1/8-in fractions (fraction refers to materials caught only in that screen size; for example, 1/8-in fraction does not include 1/4- or 1/16-in fraction). That count does not include the indeterminate mollusk fragments from the 1/16-in fraction. While all shell from the 1/16-in fraction was sorted for any identifiable invertebrate remains, bone, and cultural materials, in the interest of time, it was deemed unnecessary to count the probably over fifteen-thousand indeterminate shell fragments from the 1/16-in category. While sorting the 1/16-in shell fragments, it was observed that the overwhelming majority likely belonged to bivalves, especially ribbed mussel. It is probable that a small number of gastropod fragments, especially land snails, are included in the indeterminate mollusk category. It is also possible that a very small number of crustacean remains were overlooked while sorting the 1/16-in shell, due to small size and similar appearance, and are thus inadvertently included in the indeterminate mollusk category.

Eastern oysters (*Crassostrea virginica*), typically the most common mollusk in shell middens along the southern Atlantic coast, are the most abundant food remains in the sample in terms of individuals represented and specimen weight (Table 5.1). However, oysters contribute only 6% of biomass to the sample, behind stout tagelus (18%). Eastern oysters often occur in aggregations, year-round, in areas easily accessible to humans. The heavily exploited resource, prehistorically and historically, is common in protected areas of estuaries, typically found attached to hard bottom in shallow waters with lower salinity levels (Galtsoff 1964; Kaplan 1988; Leal 2002).

Stout tagelus (*Tagelus plebeius*) contribute the most biomass of any individual taxon in the sample (Table 5.1). The shallow-water bivalve is also highly represented by number of individuals, and as a result of its fragile shell, by number of specimens (Table 5.1). Stout

tagelus, like the eastern oyster, inhabit protected bays around intertidal or subtidal waters, but are typically found on softer bottoms, such as mud or muddy sand (Holland and Dean 1977; Leal 2002).

Atlantic ribbed mussel (*Geukensia demissa*) shells are the most fragile of the bivalves in the assemblage, leading to the highest number of specimens identified (43%). This was expected, as the concentration of ribbed mussel fragments observed in the field contributed to treating the midden deposit as a separate provenience (Feature 1, FS 05). Moreover, the number of specimens would likely be much higher if the 1/16-in shell fragments were identified, since during the sorting process it was observed that a majority of the 1/16-in indeterminate mollusk fragments probably belonged to ribbed mussels, but identifications could not be certain. Ribbed mussels are among the most abundant food taxa in the sample by number of individuals and estimated biomass (Table 5.1). They typically occur in aggregations at intertidal or subtidal depths around salt marshes, attached to hard substrates or burrowed into muddy bottom (Leal 2002).

Northern quahog clams (*Mercenaria mercenaria*) are the least abundant bivalve. Oyster, stout tagelus, and ribbed mussel all provide a higher number of specimens, individuals, and biomass (Table 5.1). No hard clam fragments were identified in the 1/16-in materials, as its shell is much more durable than other bivalves and did not fragment enough to fall through the 1/8-in screens. However, a high amount of fragmentation was observed in the larger clam shell fragments, possibly a result of the site's occupants intentionally smashing the valves for access to the edible meat. Northern quahog clams can be found distributed widely around bays and estuaries, buried in hard sand or muddy bottoms (Leal 2002; Mackenzie et al. 2002).

Marsh periwinkles (*Littorina irrorata*) and eastern mudsnails (*Nassarius obsoletus*) are the only gastropods in the sample which are considered food remains. All others in the unidentified snail (Gastropoda) taxon were very small in size and considered commensals. Seven periwinkles and two mudsnails were identified, contributing an insignificant amount of estimated biomass (Table 5.2). The 2016 Restroom Facility excavation at Taylor Fish Camp (no report available) recorded much higher numbers of periwinkles, many recovered in close proximity to each other within the shell midden, suggesting they were used as food and dumped after single meals. Periwinkles and eastern mudsnails are relatively small mollusks that inhabit the brackish waters of an estuary year-round, often found on the surface of mud flats in intertidal

zones (Scheltema 1964; Smith 1951). Marsh periwinkles also can be found crawling on grass stalks of high marshes during high tides (Smith 1951; Warren 1985)

Crab (Brachyura) specimens represent the only crustacean food-item in the assemblage. Three of the four specimens identified are relatively small-sized cheliped teeth which most likely belong to *Callinectes*, a genus of swimming crabs, but the stone crab (*Menippe mercenaria*) and the less-common Jonah crab (*Cancer borealis*) cannot be ruled out. Four C*allinectes* species are present in the region, including the abundant blue crab (*Callinectes sapidus*). The largest cheliped tooth identified is likely from a blue crab. Swimming crabs occur in a wide variety of coastal habitats ranging from the high-salinity outer areas of estuaries and beaches to the shallow upper-estuaries and freshwater river mouths (Tavares 2002; Williams 1974).

Diversity and Equitability. Twenty-four non-commensal taxa were identified in the sample (richness). When using MNI, the diversity and equitability indices for this sample are moderate (Table 5.4), indicating a slightly higher abundance of a few species (eastern oyster, stout tagelus, and ribbed mussel) but no overwhelmingly dominant taxa. When using biomass, both measures are still considered moderate but are higher (Table 5.4), indicating the leading contributors of biomass (stout tagelus, sea catfishes, diamondback terrapin, and eastern oysters) are not disproportionately abundant compared to other taxa. Taken together, these measures suggest that there is a core group of species that are better represented at the site but no single taxon absolutely dominates in importance, and supplemental species are relatively evenly distributed. Results do not suggest a strongly specialized subsistence strategy.

Screen Size. All analyzed materials from the 2018 excavation described above were sorted into 1/4-, 1/8-, and 1/16-in fractions before identification (see Appendices D and E for specimens identified by provenience and screen size). Table 5.5 displays results of the analysis according to screen sizes, showing what many previous studies have already indicated: using 1/4- or 1/8-in screens while excavating coastal middens risks losing useful subsistence data. Much of the vertebrate and invertebrate remains caught in 1/16-in screens are highly fragmented and identifiable only to phylum or class, but a valuable portion were identified to more specific taxonomic categories. The use of 1/16-in screens revealed the presence of a significant amount of small-bodied fish remains, representing at least seven families which are commonly found in Georgia's estuaries. Three of those taxa – rays, herrings, and red drum – would not have been

identified in the 1/4- or 1/8-in fractions. Importantly, the 1/16-in fraction contributed 62% of vertebrate individuals and 10% of estimated biomass to the sample (Table 5.5).

The 1/16-in fraction contains over four-times as many vertebrate specimens as the larger fractions (1,239 NISP in the 1/4- and 1/8-in, 5,304 NISP in the 1/16-in, Table 5.5). Fifty-two percent of the animal bones caught by 1/16-in screens were identified to class or beyond, and 10 percent were identified to family or a more specific taxonomic category. All vertebrate specimens identified to class or beyond belonged to fishes. The majority of identifications beyond class (71%) were killifishes or mullets, both of which would have been undetected if only 1/4-in screens were used, and significantly underrepresented if 1/8-in screens were used. The 1/16-in fraction contributed 84% of mullet specimens identified, 94% of mullet individuals, 96% of killifish specimens identified, and 82% of killifish individuals (Figure 5.1, Table 5.5). Small-bodied individuals belonging to several species of the drum family are also well-represented in the 1/16-in materials, followed by lower numbers of sea catfishes and a single flounder specimen.

Figure 5.1: Killifish specimens identified from 1/16-in screens.

All shell fragments from the analyzed proveniences which were in the 1/16-in fraction were sorted for any non-shell material and identifiable invertebrate remains. Identifiable invertebrates from the 1/16-in fraction include commensal gastropods and barnacle plates, and a single cheliped tooth from a crab claw. Ninety percent of the individuals added to the sample by the use of 1/16-in screens are invertebrates, but all are very small-sized commensal taxa (Table 5.5). The remainder of invertebrates, though many are likely fragments of Atlantic ribbed mussel, were placed in the indeterminate mollusk category, weighed, but not counted. The use of 1/16-in screens added little invertebrate subsistence information to this study, as identifications of invertebrate food-remains representative of the midden were achieved using the 1/4- and 1/8-in materials.

Modifications. Burning, calcination, and hyperostosis are the only modifications present in the fine-screened sample (Table 5.6). A large portion of the invertebrates, mainly oyster, show signs of exposure to fire, but because the observation is based on imprecise color differences (light grey to very dark grey) burned shell was not separated and quantified. At least several hundred small concretions (not counted; total weight 10.97 grams), many of which had sand-like consistency and cemented shell fragments (unidentifiable), were also recovered and are likely the result of burning. A single burned barnacle plate was the only other modification observed among invertebrate remains.

A total of 205 (3%) vertebrate specimens are burned or calcined (Table 5.6). The highest rate of heat modification is among sea catfishes, with 50% of hardhead catfish and 12% of all sea catfish specimens either burned or calcined. Heat modifications can result from a number of events, usually cooking, intentionally burning trash, or an accidental fire (Reitz and Wing 2008:130-132). The modified specimens appear to be only partially burned or charred with little calcination (0.2% of all modifications are calcined), which suggests a relatively low-temperature fire, such as that used for cooking (Reitz and Wing 2008; Lyman 2004).

A single drum specimen exhibited hyperostosis, the swelling of specific fish bones. Hyperostosis is more common among the Jacks (Carangidae) and drums, but a function of the condition is currently unknown (Smith-Vaniz et al. 1995).

Results: 2014 Donor Board-1, Midden Deposits

A total of 842 vertebrate specimens excavated from shell midden deposits in 2014 using 1/4-in screens (no report available) were analyzed. The sample is dominated by fishes and includes much smaller amounts of turtles and mammals, with eleven total taxa represented (Table 5.7). For a list of individual specimens identified see Appendix F. Seven fish taxa contribute 97% of specimens identified to class or a more specific taxonomic category, 78% of individuals, and 92% of estimated biomass to the sample. All fish families present are also represented in the fine-screened sample collected in 2018 described above, in similar proportions. Sea catfishes are the most abundant fish family in the 2014 sample, by every measure, amounting to 64% of identified specimens, 50% of individuals, and 83F% of biomass. The drum family, represented by a red drum and a trout/weakfish, contribute more to the sample than mullets, sheepshead, and a single flounder specimen (Table 5.7).

Of the two species possible in the sea catfish family, gaftopsail catfish are far more abundant than the hardhead, similar to the 2018 Donor Board-2 faunal sample. Gaftopsail catfish are represented by a minimum of six individuals and hardhead catfish a minimum of three individuals. Among the bone specimens which could be identified to the sea catfish family, 37% were identified as gaftopsail catfish and 4% as hardhead catfish (Table 5.7). Hardhead catfish contribute only 3% of biomass to the sample, while gaftopsail catfish contribute 38%, the highest among all taxa in the 2014 faunal sample (Table 5.7).

Two turtle species were identified: diamondback terrapin and a snapping turtle (*Chelydra serpentina*). Most turtle specimens were identified only to order or the pond and box turtle family, which includes the diamondback terrapin. The snapping turtle is represented by a single vertebra. Snapping turtles are common in freshwater habitats throughout eastern North America, and occasionally occur in brackish environments (Conant and Collins 1998:146; Savannah River Ecology Laboratory 1998). Eight bone specimens from the sample (1%) were burned, six of which were identified as turtle.

Two mammal species, each represented by a single bone, are present in the sample: raccoon (*Procyon lotor*) and opossum (*Didelphis virginiana*). Raccoons commonly inhabit aquatic areas around the Southeast, including barrier islands and salt marshes, where marine foods such as crabs, fishes, oysters and clams are a large part of their diet (Goldman and Jackson 1950; Trani et al. 2007). Opossums are also common throughout a variety of habitats in eastern

North America, including Georgia's barrier islands and coastal marshes (Georgia Department of Natural Resources, Wildlife Resources Division 2006; Trani et al. 2007).

Results: 2016 Restroom Facility – Pit Feature

All vertebrate remains recovered from a shallow pit-feature at Taylor Fish Camp were analyzed. The feature was screened using 1/4-in mesh during the 2016 Restroom Facility excavation (no report available). The sample contains mostly mammal and a smaller amount of fish remains (Table 5.8). Seventy-nine specimens, representing five taxa and a minimum of five individuals, weigh a total of 73.65 grams. The feature contributes a significant amount of biomass to the assemblage compared to the previously described midden deposits, a result of the higher proportions of mammal remains. White-tailed deer, raccoon, and indeterminate mammal remains comprise 33% of identified specimens, 93% of bone weight, and 95% of the biomass. For a list of individual specimens identified see Appendix G.

The white-tailed deer remains represent a single individual, providing the bulk of biomass (59%) from the feature. The tibia was already fractured *in situ* (Figure 4.9) and broke during excavation and subsequent handling. Twelve fragments of the deer tibia can be cross-mended and are counted as a single specimen. Much of the indeterminate mammal and indeterminate vertebrate remains in the sample are very likely from the deer tibia, but were mixed with other bone specimens from the provenience and could not be conclusively identified. A fragment of the tibia was submitted for radiocarbon testing, returning a ca. AD 1040-1160 date range, while a charcoal sample from the feature returned a ca. 770 – 890 range (Table 4.2). The proximal end of the tibia is fused, suggesting the individual was an adult at the time of death (Purdue 1983; Reitz and Wing 2008:173-174, 193-195). White-tailed deer are common throughout the southeastern United States, including Georgia's barrier islands where maritime oak forests provide a reliable food source, especially during the fall (Trani 2007; Osborne et al. 1992).

The raccoon individual is represented by an almost complete mandible and a partial maxilla, contributing 24% of the estimated biomass from the feature. Most of the animal's teeth are still present in the mandible. The teeth are heavily worn, suggesting the individual was an aging adult at the time of death and/or consumed a great deal of abrasive foods.

A total of ten fish specimens present in the feature were identified as sheepshead, hardhead catfish, or flounder, with each taxon representing a single individual. The sheepshead remains were all identified as skull parts and belonged to a large individual, contributing more biomass than the hardhead catfish or the flounder (Table 5.8).

Table 5.1: Species List - 2018 Donor Board-2, Midden Deposits.								
	Taxon	**Common Name**	**NISP**	**MNI**	**%**	**Weight (g)**	**Biomass (g)**	**%**
Mollusks	Mollusca	Indeterminate mollusks	7,378[a]			523.81		
	Geukensia demissa	Atlantic ribbed mussel	13,085	30	6.1	585.70	98.66	5.3
	Crassostrea virginica	Eastern oyster	638	123	24.9	784.85	109.13	5.9
	Tagelus plebeius	Stout tagelus	2,435	38	7.7	176.96	327.64	17.8
	Mercenaria mercenaria	Northern quahog clam	147	8	1.6	303.75	68.17	3.7
	Gastropoda	Indeterminate snails	49	31	6.3	0.47	0.35	<0.1
	Littorina irrorata	Marsh periwinkle	2	2	0.4	0.42	0.20	<0.1
	Nassarius obsoletus	Eastern mudsnail	7	7	1.4	3.83	1.51	0.1
	Boonea impressa	Impressed odostome	88	88	17.8	0.54	0.39	<0.1
	Stylommatophora	Land snails	197	105	21.3	0.68	0.49	<0.1
Crustaceans	Brachyura	Crabs	4	1	0.2	0.23		
	Cirripedia	Barnacles	75	9	1.8	1.74		
Fishes	Myliobatiformes	Stingrays	4	1	0.2	0.08	14.34	0.8
	Actinopterygii	Indeterminate ray-finned fishes	2,903			18.11	308.26	16.7
	Clupeidae	Herrings/shads	43	4	0.8	0.16	7.10	0.4
	Ariidae	Sea catfishes	117			10.27	182.39	9.9
	Ariopsis felis	Hardhead catfish	20	1	0.2	1.34	26.35	1.4
	Bagre marinus	Gaftopsail catfish	72	2	0.4	8.22	147.61	8.0
	cf. *Mugil* sp.	Probable gray mullets	148	18	3.6	0.83	26.07	1.4
	Fundulidae	Killifishes	256	11	2.2	0.82	25.82	1.4
	Sparidae	Porgies	4			0.19	3.44	0.2
	cf. *Archosargus probatocephalus*	Probable sheepshead	4	1	0.2	0.36	6.19	0.3
	Sciaenidae	Drums/croakers	120			1.33	48.05	2.6
	Bairdiella chrysoura	Silver perch	7	2	0.4	0.14	9.08	0.5
	Cynoscion sp.	Seatrouts/weakfishes	23	1	0.2	0.38	19.01	1.0
	Leiostomus xanthurus	Spot	4	1	0.2	0.09	6.55	0.4
	cf. *Micropogonias undulatus*	Probable croaker	4		0.0	0.03	2.90	0.2
	Micropogonias undulatus	Croaker	3	2	0.4	0.21	12.26	0.7
	Pogonias cromis	Black drum	6	1	0.2	0.13	8.60	0.4
	cf. *Sciaenops ocellatus*	Probable red drum	7	1	0.2	0.02	2.15	0.1
	Stellifer lanceolatus	Star drum	5	1	0.2	0.13	8.60	0.4
	Pleuronectiformes	Flounders	13	2	0.4	0.86	23.00	1.2
Amphibians	Anura	Indeterminate frogs/toads	1	1	0.2	0.03		0.1
Reptiles	Testudines	Indeterminate turtles	41			3.51	73.34	4.0
	Emydidae	Pond/box turtles	10			2.56	59.36	3.2
	cf. *Malaclemys terrapin*	Probable diamondback terrapin	4			2.86	63.94	3.5
	Malaclemys terrapin	Diamondback terrapin	15	1	0.2	9.90	146.92	8.0
Birds	Aves	Indeterminate birds	1	1	0.2	0.10	2.51	0.1
	Vertebrata	Indeterminate vertebrates	2,707			9.39		
	Total		**30,647**	**494**		**2,455.03**	**1,840.38**	

Note : If a biomass estimate is left blank, an allometric formula for a biomass calculation is not currently available for that taxonomic category.

[a] Total includes material from 1/4- and 1/8-in screens only; indeterminate mollusk fragments from 1/16-in screens were not counted.

Table 5.2: Summary Table - 2018 Donor Board-2, Midden Deposits.										
	Richness		**NISP**		**MNI**		**Weight**		**Biomass**	
	#	**%**	**#**	**%**	**#**	**%**	**g**	**%**	**g**	**%**
Bivalves	4	14.3	16,305	79.3	199	40.3	1,851.26	96.3	603.60	32.8
Gastropods[a]	2	7.1	9	<.1	9	1.8	4.25	0.2	1.71	0.1
Crabs	1	3.6	4	<.1	1	0.2	0.23	<.1		
Fishes	15	53.6	3,763	18.3	49	9.9	43.70	2.3	887.77	48.2
Turtles	1	3.6	70	0.3	1	0.2	18.83	1.0	343.56	18.7
Birds	1	3.6	1	<.1	1	0.2	0.10	<.1	2.51	0.1
Commensal taxa[b]	4	14.3	410	2.0	234	47.4	3.46	0.2	1.23	0.1
Total	**28**		**20,562**		**494**		**1,921.83**		**1,840.38**	

Note : Only specimens identified to taxonomic class or more specific taxonomic categories are included. If a biomass estimate is left blank, an allometric formula for a biomass calculation is not currently available for that taxonomic category.

[a] Marsh periwinkles and eastern mudsnails.

[b] Unidentified commensal gastropods, impressed odostomes, land snails, barnacles, and frogs/toads.

Table 5.3: Summary of Fishes - 2018 Donor Board-2, Midden Deposits.										
	Richness		**NISP**		**MNI**		**Weight**		**Biomass**	
	#	**%**	**#**	**%**	**#**	**%**	**g**	**%**	**g**	**%**
Myliobatiformes (stingrays)	1	6.7	4	0.5	1	2.0	0.08	0.3	14.34	2.5
Clupeidae (herrings)	1	6.7	43	5.0	4	8.2	0.16	0.6	7.10	1.2
Ariidae (sea catfishes)	2	13.3	209	24.3	3	6.1	19.83	77.5	356.35	61.5
Mugilidae (mullets)	1	6.7	148	17.2	18	36.7	0.83	3.2	26.07	4.5
Fundulidae (killifishes)	1	6.7	256	29.8	11	22.4	0.82	3.2	25.82	4.5
Sparidae (porgies)	1	6.7	8	0.9	1	2.0	0.55	2.1	9.63	1.7
Sciaenidae (drums/croakers)	7	46.7	179	20.8	9	18.4	2.46	9.6	117.20	20.2
Pleuronectiformes (flounders)	1	6.7	13	1.5	2	4.1	0.86	3.4	23.00	4.0
Total	**15**		**860**		**49**		**25.59**		**579.51**	
Note: Only specimens identified to taxonomic order or more specific taxonomic categories are included.										

Table 5.4: Diversity and Equitability - 2018 Donor Board-2, Midden Deposits		
	MNI	**Biomass**
Diversity	1.89	2.37
Equitability	0.59	0.75
Note : Includes non-commensal taxa only		

Table 5.5: Species List by Screen Size - 2018 Donor Board-2, Midden Deposits									
		NISP		MNI[a]		Weight (g)		Biomass (g)	
		1/8"	1/16"	1/8"	1/16"	1/8"	1/16"	1/8"	1/16"
Mollusks	Indeterminate mollusks[b]	7378	n/a			253.31	270.50		
	Atlantic ribbed mussel	13085		30		585.71		98.66	
	Eastern oyster	638		123		784.85		109.13	
	Stout tagelus	2435		38		176.96		327.64	
	Northern quahog clam	147		8		303.75		68.17	
	Indeterminate snails	11	38	6	25	0.36	0.11	0.27	0.08
	Marsh periwinkle	2		2		0.42		0.20	
	Eastern mudsnail	7		7		3.83		1.51	
	Impressed odostome	2	86	2	86	0.02	0.52	0.02	0.37
	Land snails	36	161	23	82	0.34	0.34	0.26	0.23
Crustaceans	Crabs	3	1	1		0.22	0.01		
	Barnacles	43	32	5	4	1.62	0.12		
Fishes	Rays		4		1		0.08		14.34
	Indeterminate ray-finned fishes	644	2,259			10.40	7.71	196.70	111.56
	Herrings/shads		43		4		0.16		7.10
	Sea catfishes	102	15			10.09	0.18	179.35	3.04
	Hardhead catfish	17	3	1		1.28	0.06	25.23	1.12
	Gaftopsail catfish	72		2		8.22		147.61	
	Probable grey mullets	27	121	1	17	0.47	0.36	16.63	9.44
	Killifishes	9	247	2	9	0.08	0.74	4.11	21.71
	Porgies	4				0.19		3.44	
	Probable sheepshead	4		1		0.36		6.19	
	Drums/croakers	66	54			1.06	0.27	40.62	7.43
	Seatrouts/weakfishes	19	4	1		0.35	0.03	17.89	1.12
	Silver perch	3	4	2		0.12	0.02	8.10	0.98
	Probable redfish		7		1		0.02		2.15
	Black drum	1	5	1		0.11	0.02	7.60	1.00
	Star drum	2	3	1		0.08	0.05	6.00	2.60
	Spot	3	1	1		0.06	0.03	4.85	1.70
	Croaker	3		2		0.21		12.26	
	Probable croaker		4				0.03		2.90
	Flounders	12	1	2		0.85	0.01	22.76	0.24
Amphibians	Frogs/toads	1		1		0.03			
Reptiles	Indeterminate turtles	41				3.51		73.34	
	Pond turtles	10				2.56		59.36	
	Diamondback terrapin	15		1		9.90		146.92	
	Probable diamondback terrapin	4				2.86		63.94	
Birds	Birds	1		1		0.10		2.51	
	Indeterminate vertebrates	178	2,529			3.22	6.17		
		25,025	**5,622**	**265**	**229**	**2,167.50**	**287.54**	**1,651.27**	**189.11**

Note: The 1/8-in columns represent specimens caught in both 1/4- and 1/8-in screen sizes; the 1/16-in columns represent *only* the specimens which fell through 1/4- and 1/8-in screens and were caught in 1/16-in screens, displaying data gained by using 1/16-in. If a biomass estimate is left blank for both screen-size columns, an allometric formula for a biomass calculation is not currently available for that taxonomic category.

[a] MNI for 1/16-in materials includes only the inviduals which are in addition to the MNI calculated using the 1/4-in and 1/8-in materials

[b] Indeterminate mollusk fragments from 1/16-in screens were weighed but not counted.

Table 5.6: Modifications - 2018 Donor Board-2, Midden Deposits.						
	Hyperostosis		**Burned**		**Calcined**	
	#	**%**	**#**	**%**	**#**	**%**
Barnacles			1	1.3		
Indeterminate ray-finned fishes			117	4.0	4	0.1
Sea catfishes			7	6.0	3	2.6
Hardhead catfish			9	45.0	1	5.0
Gaftopsail catfish			3	4.2	2	2.8
Probable grey mullets			2	1.4	1	0.7
Herrings					1	2.3
Killifishes			2	0.8		
Drums	1	0.8				
Croaker			1	33.3		
Turtles			5	7.1		
Indeterminate vertebrates			42	1.6	2	0.1
Stingrays					1	25.0
Total all specimens	**1**		**189**		**15**	

Note : Percentages represent the proportion of specimens of individual taxa exhibiting the specified modification. Concretions with burned/cemented shell (not counted, total weight 10.97 grams) are not included in this table.

Table 5.7: Species List - 2014 Donor Board-1, Midden Deposits.							
	Taxon	**Common Name**	**NISP**	**MNI**	**Weight (g)**	**Biomass (g)**	**%**
Fishes	Actinopterygii	Indeterminate ray-finned fishes	272		17.78	303.70	13.8
	Ariidae	Sea catfishes	301		48.41	795.59	36.0
	Ariopsis felis	Hardhead catfish	19	3	3.00	56.66	2.6
	Bagre marinus	Gaftopsail catfish	186	6	50.84	833.48	37.7
	cf. *Mugil* spp.	Probable grey mullets	5	1	0.11	5.28	0.2
	cf. *Archosargus probatocephalus*	Probable sheepshead	2	1	0.18	3.27	0.1
	Sciaenidae	Drums/croakers	3		0.19	11.38	0.5
	Sciaenops ocellatus	Red drum	1	1	0.08	6.00	0.3
	Cynoscion sp.	Trouts/weakfishes	4	1	0.16	10.02	0.5
	Pleuronectiformes	Flounders	1	1	0.22	6.84	0.3
Turtles	Testudines	Turtles	14		2.02	50.65	2.3
	Chelydra serpentina	Snapping turtle	1	1	0.23	11.81	0.5
	Emydidae	Pond/box turtles	3		0.66	23.94	1.1
	Malaclemys terrapin	Diamondback terrapin	8	1	2.77	62.58	2.8
Mammals	*Didelphis virginiana*	Opossum	1	1	0.94	24.88	1.1
	Procyon lotor	Raccoon	1	1	0.06	2.09	0.1
	Vertebrata	Indeterminate vertebrate	20		2.27		
	Total		**842**	**18**	**129.92**	**2,208.17**	

Note: If a biomass estimate is left blank, an allometric formula for a biomass calculation is not currently available for that taxonomic category.

Table 5.8: Species List: 2016 Restroom Facility, Pit Feature 7A.							
	Taxon	**Common Name**	**NISP**	**MNI**	**Weight (g)**	**Biomass (g)**	**%**
Fishes	*Bagre marinus*	Gaftopsail catfish	3	1	0.48	9.94	0.7
	cf. *Archosargus probatocephalus*	Sheepshead	6	1	3.87	55.04	4.0
	Pleuronectiformes	Flounders	1	1	0.05	1.83	0.1
Mammals	Mammalia	Indeterminate mammals	20		7.89	168.80	12.4
	Procyon lotor	Raccoon	5	1	16.17	321.99	23.6
	Odocoileus virginianus	White-tailed deer	1	1	44.70	804.04	59.0
	Vertebrata	Indeterminate vertebrates	43		0.49		
	Total		**79**	**5**	**73.65**	**1,361.64**	
Note : If a biomass estimate is left blank, an allometric formulae for a biomass calculation is not currently available for that taxonomic category.							

CHAPTER 6
DISCUSSION: LATE WOODLAND/EARLY MISSISSIPPIAN PERIOD SUBSISTENCE STRATEGIES AT TAYLOR FISH CAMP

The subsistence pattern of Late Woodland/Early Mississippian period inhabitants of Taylor Fish Camp, evidenced by animal remains, is consistent with past behavior of prehistoric residents of the southern Atlantic coast. Site occupants relied heavily on aquatic resources available in estuarine waters near the site. Terrestrial mammals such as white-tailed deer and raccoons were also used, but the primary focus of subsistence strategies was a variety of small-sized marine fishes, shellfish, and turtles common to the creeks and salt marshes of coastal Georgia. The use of fine-mesh screens during excavation reveals the value of small-sized fishes to the resource base and helps to emphasize the overall importance of fishing to the site's former inhabitants. Small-sized fishes were likely targeted with mass-capture devices such as nets and traps, and identified species suggest residents remained at the site for multiple seasons. The following chapter discusses the zooarchaeological evidence for subsistence strategies employed by Late Woodland/Early Mississippian period occupants, then faunal evidence from Taylor Fish Camp is then compared with roughly contemporaneous assemblages from other sites near the mouth of the Altamaha River and with Late Archaic period faunal remains recovered from the same peninsula, to examine prehistoric lifeways on northern St. Simons Island.

Targeted Resources and Diet

Based on zooarchaeological evidence, locally-available aquatic resources were most important for subsistence. Invertebrate and vertebrate remains from shell midden deposits indicate a core group of marine fishes, shellfish, and aquatic turtles comprised the bulk of the diet. Mammals may have provided occasional but sizeable contributions, and other terrestrial and non-aquatic animals such as birds served as a minor source of food.

A total of 27 animal species were identified as food remains at Taylor Fish Camp, suggesting a wide range of animals were part of subsistence practices (Tables 5.1, 5.7, 5.8). Richness is largely dependent on sample size, so analysis of contemporaneous materials would likely add additional taxa to the species list. For example, while visually scanning the remains that were not analyzed as part of this study, it was observed that most of the remaining faunal

materials probably belong to the same invertebrate and vertebrate species already identified during this study, but elements belonging to species not identified during the study were occasionally observed (a gar scale, shark tooth, and knobbed whelk [*Busycon carica*]). Those taxa likely represent small additions to the diet or possibly incidental catches while pursuing regular targets. Fish species such as gar, largemouth bass, bowfin, jacks, southern kingfish, pinfish, pigfish (*Orthopristis chrysoptera*), and ladyfish are fairly common in Georgia's estuaries. Aquatic turtles other than diamondback terrapin and snapping turtle, mammals such as squirrel and mink (*Mustela vison*), and a variety of bird species are also available along coastal Georgia and have been identified at other prehistoric sites along the Georgia Bight, but in low numbers compared to the typical suite of resources. It is likely that residents of Taylor Fish Camp occasionally captured some of these and less-common species in addition to the resources present in this assemblage.

Deposit Types. Invertebrate and vertebrate remains are rarely excavated using fine-mesh screens then analyzed in direct proportion with each other, mainly as a result of the time-consuming effort required to sort, identify, and quantify the massive amounts of mollusk fragments present in coastal middens. The analysis of two zones of shell midden deposits in their entirety for this study indicates a significant contribution to diet was provided by shellfish, but a higher contribution came from vertebrates. Shellfish contribute 42% of the individuals, but only 33% of estimated biomass (Table 5.2). The remaining 67% of biomass is provided by fish and turtles. These proportions are not typical of coastal assemblages when invertebrates are included in analysis; shellfish usually dominate other taxa by all measures (Bergh 2012 114-151; Parsons and Marrinan 2013; Quitmeyer and Reitz 2006). It is possible that this represents a subsistence strategy at Taylor Fish Camp where turtles and fish were more actively targeted than shellfish, but it is also possible that the lower proportion of invertebrates is a result of the deposit types chosen for analysis. Both proveniences were recognized during the 2018 excavation as midden zones with higher concentrations of animal bone, in addition to dense shell and charcoal, resulting in higher proportions of vertebrate remains during analysis. Further analysis of contemporaneous materials from general midden deposits will probably lead to higher numbers of shellfish compared to all vertebrates, but the identified invertebrate and vertebrate taxa are unlikely to drastically change in proportion to each other, and are considered an adequate sample of the most commonly targeted species at the site and general subsistence practices.

The fine-screened zones analyzed for the study likely represent a series of dumps near the beginning of the midden's formation, after several meals following multiple fishing/collecting trips. Vertebrate remains from an adjacent midden zone with similar characteristics, excavated in 2014 with 1/4-in mesh but not quantitatively combined with the fine-screened materials, show similar proportions of vertebrate use, with sea catfishes, drums, and turtles most prominent and minor contributions from mammals (Table 5.7). The low proportions of terrestrial remains in the coarse-screened general midden deposits compared to the high proportions recovered from the pit feature indicate land animals such as mammals were not a typical target and represent a supplementary resource. A single bird bone and a frog/toad specimen represent the only potentially non-aquatic animals identified in the fine screened sample, though both may not have been consumed. Additionally, very little mammal remains were observed while scanning the unanalyzed materials from the site, further indicating the emphasis on aquatic resources.

The mammal remains recovered from feature 7A in 2016 suggest that they were periodically hunted and may have provided meals on special occasions, evident by the deer and raccoon remains in direct association with a cooking vessel (Figure 4.9). The shallow basin (less than 20cm in depth), large sherds, lightly charred faunal remains, and charcoal materials recovered from the feature suggest a cooking pit, or the remains of a single event discarded near the beginning of the formation of the midden, which later burned. The limited amount of fish remains from the feature are possibly associated with the midden refuse discarded on top of the feature and may have been higher in number if the feature was fine-screened. Estimated biomass contributions from the feature's mammal remains are proportionally high in comparison with the more common aquatic animals in the general midden deposits. Future studies could help reveal the frequency of these events and the relative contribution of mammals to diet, but the current evidence from general midden deposits indicates residents of Taylor Fish Camp adapted to their coastal setting in the same general manner as other prehistoric residents, focusing mainly on estuarine resources.

Vertebrate Resources. Marine fishes are the most abundant vertebrate food resource in the Taylor Fish Camp assemblage. Sea catfishes, by a large margin, provide the most biomass, followed by drums, mullets, killifishes, flounders, rays, porgies, and herrings. Mullets, killifishes, catfishes, and drums contribute the most individuals. These rankings are similar to other fine-screened remains from sites along the southern Atlantic coast, where catfishes, drums,

and mullets are consistently the most abundant fishes in prehistoric assemblages in terms of both biomass and individuals (Reitz 2014), while a variety of other fishes were caught but contributed less to subsistence.

Not unexpectedly, sea catfishes are the main dietary contributor among fishes. Gafftopsail and hardhead catfish provided the most biomass of all vertebrates in the fine-screened sample and dominated the coarse-screened midden deposits by all measures. Most modern Americans are averse to consuming saltwater catfish, and some prehistoric cultures residing on the Gulf Coast of Florida may have actively avoided them (Lawson 2005:110), but heavy use of sea catfishes by coastal residents of the Georgia Bight since the Late Archaic period is apparent. Their high numbers in prehistoric assemblages is partly due to easily-identifiable skeletal elements, but mainly a result of extensive use and resulting ubiquity in coastal middens.

The hardhead catfish is often the more abundant of the two possible sea catfishes in many collections from the Georgia coast (e.g. Bergh 2012; Colaninno 2010; Quitmeyer and Reitz 2006; Reitz 1982b) but the gafftopsail catfish is notably more abundant in all contexts analyzed for this study, the Late Woodland/Early Mississippian samples from other locations on Cannon's Point peninsula (Martinez 1975:93; Table 6.1), and the Late Archaic assemblage recovered from shell rings on the peninsula (Marrinan 1975: 7-70, 2010; Table 6.1). It seems unlikely that this is result of the ease with which gafftopsail catfish can be identified (see Marrinan 2010), as hardhead neurocranium fragments and spines are just as easily identified. It also seems unlikely to be a result of a preference by site inhabitants for either species since they are very similar in appearance, both contain venomous spines, and both can be caught in similar habitats throughout the estuaries and sometimes the same location. Hardhead catfish are overall more abundant along the coast and can tolerate a wider range of salinity levels, venturing farther inland towards freshwater and possibly occurring in greater numbers than gaftopsail catfish in the higher salinity waters of the beaches and lower estuaries (Dahlberg 1972; Muncy and Wingo 1983). The northern end of St. Simons Island's location near the mouth of the Altamaha River provides a salinity level that is preferable for gafftopsail catfish, which have a narrower range of tolerance for salinity levels (Johnson et al. 1974; Muncy and Wingo 1983). This possibly led to larger populations of gafftopsail catfish and more catches by the island's prehistoric inhabitants. However, Mississippian period faunal collections from Sapelo Island (Reitz 1982a), an island with more saline waters because of its location farther from a river mouth (Colaninno 2010:211;

Johnson et al. 1974), contain some faunal assemblages with more gaffstopsail catfish individuals, but also contain one with substantially more hardhead catfish. Additionally, the Middle/Late Woodland assemblage from Cathead Creek, a site with lower salinity levels due to its location towards the upper reaches of the estuary in the Altamaha Sound, contains more gafftopsail catfish (Reitz and Quitmeyer 1988), where you may expect to see a higher proportion of hardhead catfish. It appears that different proportions of sea catfish species in prehistoric collections are not a direct result of one species regularly occurring near a site more than the other due to salinity level. More research is needed to understand the occurrence of sea catfishes in response to fluctuating salinity levels, especially in the middle and upper reaches of estuaries where the salinity ranges are greater (Reitz and Quitmeyer 1988).

Body size reconstructions were not completed for this study, but it is apparent that nearly all fish remains are from small or medium size species, or from younger individuals of species which grow to larger sizes. All identified species inhabit the shallow waters around the island as juveniles and/or as adults for spawning or feeding, or during their entire life. Larger individual mullet, black drum, red drum, catfish, sheepshead, flounder, and the less-frequently encountered large-size jack, tarpon, shark, ray, and sturgeon, are available in the estuaries around St. Simons Island and were possibly desirable foods, but do not appear to have been regular targets. This could be a result of environmental changes which have since affected fish populations, or intentional selection of small fishes by use of a particular capture technique. It is more likely that large species were used when captured but were simply not as common in the areas of the estuary which were chosen to fish, where concentrations of small- and medium-size species were sufficient for subsistence.

Small Fishes. The majority of fish individuals in the assemblage are fingerling (young/small-size) mullet, killifish, drum species which do not grow to large sizes (star drum, croaker, spot, and silver perch), and herring, all of which were likely targeted for consumption. Mullets and drums are consistently recovered in large proportions from prehistoric sites in the region, but killifishes, which grow to the smallest sizes in comparison to the others, are less common. This is partially a result of screen sizes, as most killifish specimens are likely lost with coarse-mesh screens. Most killifish specimens identified for this study were recovered in the 1/16-in fraction and the remainder from the 1/8-in fraction (Table 5.5). Considerable numbers of

probable killifish specimens, along with fingerling mullet and other small fishes, were also observed while scanning the unanalyzed 1/8- and 1/16-in fractions.

Killifish, mullet, some species of herrings, and small drums could potentially be taken in the same locations, as they all can be found in creeks around St. Simons Island, sometimes gathering in schools. A single, mass-capture technology such as a tidal trap, weir, or net could have been efficient enough to catch all these species in the same area. However, killifishes more often inhabit slightly different environments as the other fishes present in the assemblage and may represent a separate subsistence strategy. Mummichogs and striped killifishes, the more abundant members of the killifish family around coastal Georgia and the most likely species that are present in the assemblage, are more common in shallower vegetated areas of the high marsh and tidal pools (Wiley and Ghedotti 2002:1147). Both species can also tolerate high-salinity waters and could have been captured in the shallowest areas of the beaches. The other fish species present in the assemblage are more likely to inhabit the creeks, channels, bays, river mouths, and sounds around the estuary. This further suggests that killifish were intentionally targeted, probably with a different technique such as a basket scoop or dip net.

Few studies of prehistoric subsistence at sites along the Georgia Bight mention that the smallest fishes may not have been consumed. It is possible that killifishes, fingerling mullet, and perhaps the smallest drum species and herrings were stomach contents of larger fishes, but the very limited number of large fish remains recovered from this and other coastal sites are not enough to account for the abundance of small fish remains in shell middens, assuming the large fish were not gutted in one location and their skeletal remains discarded in another. It is also possible the small fishes were not consumed and were unintentionally caught while pursuing relatively larger and more desirable fish, or used as bait to capture larger fish or crabs, but it is more reasonable that these small individuals were expected catches and were eaten. Killifish, mullet, herrings, and small drums do not add much meat to the diet, when considering individual biomass estimates from each taxon, but taken together, the smallest size fishes provide a significant biomass contribution. The large numbers of small fish individuals present in the midden and the lower representation of larger fishes, and the fact that so many small fishes were transported back to the site and not dumped where they were inadvertently captured, indicate they represent targeted resources.

An ethnohistoric account from the Southeast describes a basket-like device constructed by Native Americans to transport large amounts of small fish back to a site for consumption (Swanton 1911:72). Ethnohistoric accounts by Europeans are possibly exaggerated and inaccurate and should not be treated as direct evidence of Native American culture and subsistence practices, especially when investigating subsistence practices utilized around one-thousand years prior to the creation of those records, when behaviors could have been much different. Ethnohistoric accounts can be valuable though, when physical evidence is limited. Ethnohistoric accounts of Native American subsistence practices on St. Simons Island are not available, but written records of early interaction with Native Americans in other areas in the southeastern region reveal possible adaptations of people who lived in similar environments with the same general resources at their disposal, and are useful in a discussion of prehistoric fishing strategies at Taylor Fish Camp.

The process of preparing and consuming fish, especially for the smallest species found in coastal middens such as killifish, is seldom discussed, a result of limited evidence for specific cooking or preservation techniques. Boiling with ceramic vessels is of course the more conspicuous cooking method in the archaeological record, visible by the density of ceramic sherds from numerous vessels in shell middens, including Taylor Fish Camp. The boiling of fish has been documented ethnographically in the Southeast (Swanton 1922:392), including an account by a Spanish priest traveling along Florida's east coast during the late sixteenth-century who describes multiple whole fish (probably mullet; Larson 1980:122) being cooked in a large pot (Garcia 1902: 208). Much of the excavated midden at Taylor Fish Camp appeared heat-altered, but probably not as a result of cooking methods. A large proportion of the shell appears burned (dull grey in color) and was recovered near cemented shell concretions, possible ash, hardened soil, and a small number of calcined bone fragments, all of which are more characteristic of fires with higher temperatures than is needed for cooking, suggesting that the garbage was burned intentionally and/or by a natural fire. However, the highest proportions of charred animal bones belong to sea catfishes and turtles (Table 5.6; Appendix F), larger species which could have been roasted directly above a fire. Medium and larger fish and turtles also could have been roasted on a stick or placed on a spit, as depicted by Lemoyne in an ethnohistoric painting of sixteenth-century Timucuans in northeast Florida (Lorant 1946:83).

The smallest fishes found in coastal middens were probably used to prepare a broth or fish sauce, or eaten whole after being dried and/or smoked or boiled. Larger fish were likely filleted, eviscerated, or prepared in some manner before cooking, but most preparation methods for the smallest fishes seem impractical and would damage skeletal elements. Many killifish and some of the fingerling mullet vertebrae identified still have intact spinous processes and do not show evidence of digestion, suggesting they were not prepared, chewed, or digested, but were used whole for cooking purposes. Removing the heads to consume only the bodies of small fishes could leave little skeletal damage and lead to higher numbers of cranial or post cranial elements in one location, but the elements present in this sample do not suggest this. Thirty-three percent of killifish and mullet specimens identified are cranial elements, 67% are post cranial, most of which are the more easily identified vertebrae. It is probable that the small fishes are "leftovers," the dregs and skeletal elements of whole fishes used to make a broth, fish sauce, or perhaps a stew, which sink to the bottom of a vessel, were not consumed, then dumped into the middens. Though small fish bones are less-likely to survive in the archaeological record after some cooking and consumption methods (Wheeler and Jones 1989:67), we are likely excavating mostly food remains along with refuse from multiple activities. Small fishes in coastal middens are probably the remains of meals after being eaten whole, leftovers from broths or sauces, unused fishes which spoiled and were thrown away, and perhaps scraps given to dogs or leftover bait used to catch larger other fishes.

Invertebrate Resources. The deposit types analyzed suggest dietary contributions from shellfish are lower in comparison to vertebrates, but further analysis will probably lead to higher proportions of shellfish individuals and estimated biomass, since the deposits were chosen for analysis partly as a result of the high concentration of animal bones. Regardless, it is clear that collection and consumption of shellfish was a huge part of the subsistence strategy for Late Woodland/Early Mississippian period inhabitants of Taylor Fish Camp. Oyster, hard clam, mussel, stout tagelus, and periwinkle, mollusk species which make up the bulk of coastal shell middens, are all present in the assemblage and contribute a significant portion of meat to the diet, according to biomass estimates.

Oysters shells are consistently the main component of prehistoric shell middens along the Georgia coast, but the series of refuse dumps in the areas excavated for this study may have been a result of shellfish harvesting trips that targeted stout tagelus and ribbed mussel. Biomass

contributions from these taxa are proportionally more abundant in this assemblage compared to others, with stout tagelus providing substantially more meat than any individual animal in the fine-screened sample, including oyster. In studies which did quantify invertebrates, only a Swift Creek context at King's Bay, Georgia also had high biomass contributions from stout tagelus (Reitz and Quitmeyer 1988). Stout tagelus shells are thinner and lighter in comparison to other bivalves, leading to a much higher meat-weight to shell-weight ratio. Stout tagelus and ribbed mussels are less abundant in the estuaries than oyster but are often found within similar intertidal and subtidal areas as oyster reefs and other mollusk species. Ribbed mussels can live in small patches among oyster beds (Thomas 2008a:101). Ribbed mussel and stout tagelus are usually buried and more scattered around the mud flats, as opposed to oysters which live in larger, denser, and much more visible clumps. They could have been periodically discovered while gathering oysters, the main target, but the concentrations of stout tagelus and ribbed mussel in shell deposits at Taylor Fish Camp suggest their smaller colonies may have been a main objective of some collecting trips. Presumably, refuse dumps after these events occasionally appear as loose concentrations in shell middens. Further analysis of invertebrates from the site will likely show higher proportions of oyster, but stout tagelus and ribbed mussel contributions to diet will likely remain substantial, as both species are evident in the unanalyzed materials from the 2018 excavation.

Habitats Exploited

Faunal remains indicate estuaries and near-shore marine environments were the most heavily-exploited habitats. The animals present in the assemblage suggest that Late Woodland/Early Mississippian period occupants experienced similar environmental conditions to those of today, as all species identified currently inhabit the estuaries and terrestrial habitats on or near St. Simons Island. Offshore waters, hardwood forests, pine barrens, riverine environments and freshwater ponds were available to Taylor Fish Camp inhabitants, but the faunal evidence shows little use of these areas. The mammals present in the assemblage (deer, raccoon, opossum) were likely captured in the maritime oak hammocks surrounding the site. It is possible that further analysis of faunal materials from Taylor Fish Camp will show increased contributions to diet from terrestrial animals, but aquatic resources common to the creeks,

marshes, channels, sounds, and mud flats in coastal estuaries clearly provided the most important resources to subsistence.

No fish species which require freshwater or prefer very low salinity levels were identified in the assemblage. Fish species found in low-salinity brackish waters such as gars and pickerel, freshwater species such as largemouth bass, bowfin, and bullhead catfish (*Ameiurus* sp.), or strictly freshwater turtles such as mud turtles (*Kinosternon* sp.) and cooters were not found at Taylor Fish Camp, suggesting inhabitants did not make fishing or collecting trips into the Altamaha River and did not heavily utilize the freshwater ponds that were likely present on the island. A single snapping turtle specimen was identified suggesting infrequent use of freshwater habitats, though they can occur in brackish environments (Conant and Collins 1998:146; Savannah River Ecology Laboratory 1998). Fish species that are more commonly caught on the beach side of the barrier islands or in deeper sounds and offshore waters, such as grouper (*Epinephelus* sp.), snapper (Lutjanidae), southern kingfish, bluefish (*Pomatomus saltatrix*), silver trout, Atlantic bumperfish (*Chloroscombrus chrysurus*), tarpon (*Megalops atlanticus*), and sharks, are not present in the assemblage, indicating little use of those areas. Some of the fish species identified can occur on the beaches and lower estuaries, or in the brackish waters of the upper estuaries, but all are more common in the middle-estuary habitats surrounding Cannon's Point peninsula.

The shellfish which provided such an important resource could also be collected in the high marsh and mud flats around the island. Stout tagelus, ribbed mussels, and hard clams are sometimes found near large clumps of oysters, the most well-represented food resource in coastal middens. Most of the fishes identified are attracted to oyster beds and also would have been available in the same general locations, further indicating the importance of oyster reefs to prehistoric subsistence. Drums, flounder, and killifishes are particularly abundant near oyster reefs (Grabowski et al. 2005).

The catchment area suggested by the fauna could potentially extend past 20 km if inhabitants chose to utilize water craft to travel among the various local environments where the animals could be found at different times throughout the year. The hardhead catfish, silver perch, mullet and several species of killifish present in the assemblage could have been captured in the furthest reaches of the upper estuaries and river mouths. The flounder, black drum, red drum, sheepshead, and ray could have been caught on the beaches or the deeper channels and

sounds of the lower estuaries. The most common species of killifish (striped killifish and mummichogs) could have been caught along the shallow shores of the beaches. However, all of the resources which appear to have been routinely exploited, along with the more rare catches, are easily accessible in the tidal creeks and shallow channels within a radius as small as 1 km. Settlement patterns are a means by which the effort required to capture and transport food are controlled (Reitz and Wing 2008:251), and it appears that inhabitants of the site chose a location with efficient access to dependable estuarine resources.

Seasonality

Presence or absence of faunal remains identified at Taylor Fish Camp suggest Late Woodland/Early Mississippian period inhabitants exploited resources during the summer and fall seasons, perhaps year-round. The assemblage is dominated by shellfishes and fishes available all year along the coast, most of which are more common during the warmer months. Diamondback terrapins are available all year but are more easily captured during spring and early summer, when they leave water to mate and nest on shore. Mammals are available on the barrier islands throughout the year. The most important fish families to subsistence - catfishes, drums, and mullets - can be scattered and less-common during winter and early spring but are abundant in the estuaries during the warmer months. The two most-represented taxa in terms of fish individuals – fingerling mullets and killifishes – are available all year and are just as abundant throughout the colder months (Nelson et al. 1991:41-90).

Generalizations about the seasonality of fishes are complicated by the fact that most species which spend their lives in coastal waters move between estuaries and nearshore waters, and among different habitats within an estuary, according to salinity, oxygen level, bottom type, and temperature, not just as a response to the time of year. Much of the mobility of fishes affecting abundance are related to size and age classes (Reitz et al. 2012). Measurements of archaeological specimens were not completed for this study. Since fishes are overall less-abundant in the estuaries during colder months (Nelson et al. 1991:41-90; Dahlberg and Odum 1970) and the dominant fishes identified at the site are those which are most abundant during the warmer months, a safe assumption is that residents were able to capture large amounts of those fishes during the warmer seasons. Residents of Taylor Fish Camp relied heavily on estuarine

fishes and must have adapted to their movements by modifying their intended targets, locations, technology, and when they fished.

A few animal species in coastal Georgia are highly seasonal. Their presence at a site could provide better evidence for time of year they were captured and potentially when a site was occupied. Some birds temporarily use the Georgia coast while traveling on migratory paths during the fall, winter, or spring, depending on species (Johnson et al. 1974:59-61). Sea turtles arrive on the beaches during the summer to lay eggs. American eels (*Anguilla rostrata*) leave freshwater to spawn in the ocean during late winter and early spring (Smith 2002:692). Cownose rays are migratory and appear on the coast in large numbers during spring and fall (Weinand et al. 2000), but the ray specimens identified at Taylor Fish Camp could not be identified beyond taxonomic order. Adult sturgeon are anadromous, leaving the ocean to spawn in freshwater, including the Altamaha River (Dahlberg 1975:32), from later winter into spring. Shads (*Alosa sp.*) are also anadromous, entering freshwater from offshore waters to spawn from late winter to early spring, depending on the species (Dahlberg 1975:37; Nelson et al. 1991:41-90). The herrings/shads (Clupeidae) specimens identified at Taylor Fish Camp could be species of shad, suggesting capture during late winter or spring, but the individuals could have been juveniles that remain in the estuaries year-round (Dahlberg 1972, Nelson et al.:41-90), or menhaden (*Brevoortia* sp.), which also can be widely available in estuaries throughout the year.

Seasonal species are occasionally identified in low quantities from prehistoric coastal sites (i.e. Martinez 1975; Weinand et al. 2000) but none, other than the potential shads, was identified at Taylor Fish Camp. The absence of animals available during a certain time of the year, however, does not equate to the absence of people during that time. Groups of people may have continued living at a location, but consumed foods that were captured/collected during a previous season and stored for later use, or used taxa with a limited archaeological signature. The seasonal animals also could have been actively avoided as a matter of preference. Additionally, processing and disposal methods used for seasonal resources may not have preserved in the archaeological record or may have taken place in a separate, unexcavated location. To mitigate the disadvantage of excavating a small number of locations and broaden our understanding of subsistence and seasonal strategies, Late Woodland/Early Mississippian period faunal remains excavated from multiple areas on Cannon's Point peninsula during a previous study (Martinez 1975) are discussed below. A large sturgeon and sea turtle were

identified during that study, in addition to the typical suite of estuarine resources, suggesting occupation of the peninsula during spring and summer.

Acorns (burned) were present in low numbers scattered throughout the midden and in a concentration associated with Feature 3 from the 2018 excavation and a concentration associated with Feature 2 during the 2014 excavation, but not within the proveniences chosen for faunal analysis. Four acorns were radiocarbon dated, all returning date ranges in the eleventh and twelfth century AD (Table 4.2). Hickory nuts (burned) were recovered from near the bottom levels of the midden and the relatively sterile subsoil. Deposits near the surface are mixed with modern and historic materials, and pit feature 5 excavated in 2018 and described in Chapters 5 and 6 is associated with Early/Middle Mississippian period activities, but the bulk of the midden is deposits from Late Woodland/Early Mississippian period inhabitants. The presence of acorns and hickory in the general midden levels suggests collection during the fall seasons on the Georgia coast, when both are available for harvest.

Capture Techniques

Fishing Technologies. Ideally, archaeologists would have direct evidence of specific prehistoric fishing methods, but physical remains of fishing gear are rare on Georgia's coast and were not recovered from Taylor Fish Camp. Ethnohistoric accounts of Native Americans in the region contain some references to fishing techniques and can add limited evidence for prehistoric fishing methods. European explorers and colonists in the Southeast recorded use of multiple techniques including hook-and-line, trot lines, spears, harpoons, leisters, poison, traps, weirs and multiple types of nets (e.g. Larson 1980; Lawson 1967; Rostlund 1952; Swanton 1911, 1922, 1946; Thomas 2008a). The more valuable, and often the only, line of evidence is inference of fishing methods through the sizes, habits, and habitats of the species identified from an archaeological site (Larson 1980; Colaninno 2010). Fish remains from Taylor Fish Camp indicate mass-capture technologies such as nets, traps, and weirs were the most effective fishing method.

The behavior of identified fish species, their abundance in the assemblage, and their diminutive sizes, suggest that individual-capture technologies such as hook-and-line, spears, leisters, or harpoons were used less-frequently. Fingerling mullets, killifishes, herrings, and small drums are the most abundant individuals in the assemblage, all of which are unlikely to

have been captured using those methods. Mullets, herrings, and killifishes are herbivores with tiny mouths and would be extremely difficult, and when small enough, nearly impossible, to capture using a baited hook. Small drums could have possibly been caught using small hooks, but like mullets, killifishes, and herrings, small drums tend to swim in schools in shallow water and are more susceptible to mass-capture techniques. Larger drums, catfishes, sheepshead, flounder, and rays are bottom-feeding carnivores and could have been taken with hook-and-line, especially as larger individuals, perhaps as a supplemental technique to a more effective mass-capture technique designed to catch fishes of multiple sizes in the same location. The flounder and rays in the assemblage may be vulnerable to spears or leisters when occasionally encountered in shallow waters. Larger mullets were apparently speared or darted by Native Americans living in the northeast Florida during the historic period (Dickinson 1975:13, cited in Thomas 2008a; Garcia 1902:208; Larson 1980:122) but fingerling mullet, along with killifish, herrings, small drums, and small catfish would be impractical if not impossible to catch in large numbers, in turbid waters, using similar techniques. The most commonly targeted fishes at Taylor Fish Camp are most effectively captured with weirs, traps, and nets, and the less-commonly targeted fishes could be caught using the same methods in the same locations.

Multiple types of weirs, traps, and nets are recorded in ethnohistoric accounts around the Southeast including the southern Atlantic coast, and were likely used along coastal Georgia (Larson 1980:115-126; Rostlund 1952; Thomas 2008a:126-131). Each would have been designed to accommodate the targeted species or group of species, their body sizes, and the habitat in which they were encountered (Wheeler and Jones 1989:168). Weirs are designed to block or direct movement of fishes and could have been set up in tidal creeks, potentially leaving fishes of nearly all types and sizes stuck on one side of a blockage or directed into a trap as the tide recedes. Another technology such as spears, basket scoops, or dip nets could have then been used to capture the concentrated fishes. Seine nets are dragged across a body of water by people holding each side, either wading in the water or holding them from boats. Seine nets are most effective for schooling fish in shallow waters and are also size-selective based on mesh-size. Fishes smaller than the holes in the net can swim through and will not be captured, and those larger will be captured unless they are able to flee the movement of the net. Gill nets are highly size-selective and tend to catch medium-size fishes. They are stationary, potentially across a tidal creek, and will only capture fishes of a certain size that entangle themselves while trying to

swim through the net. Small fishes will swim safely through the chosen mesh-size while larger fishes can turn around and avoid capture by not attempting to swim through the net. Weirs used with traps, gill nets, and seine nets were likely the most dependable and commonly-used capture techniques for Taylor Fish Camp inhabitants, given the mass quantities, wide variety, small sizes, behavioral habitats, and most commonly used habitats of fishes identified at the site.

Dip nets or some type of trap/scoop device could have been used to capture the killifish and fingerling mullet. The killifish species likely to be represented at Taylor Fish Camp (mummichogs and striped killifish) are more commonly found in the shallowest, vegetated areas of the high marsh, tidal pools, and creeks. Killifishes and mullets gather in schools and would have made relatively easy targets in areas accessible by foot. A dip net, small trap, or scooping device would have been designed to target mullets and killifishes in those areas and require less labor than the larger harvests of larger fishes captured in deeper creeks and channels. A dip net would use mesh-size sufficiently small, attached to a handle, and could be operated by a single person.

Fishing-related artifacts used to construct the devices would have been constructed with organic materials such as wood, vines, or palmetto fiber, which are rarely preserved on archaeological sites. Prehistoric fishing artifacts may also seem nearly non-existent on the coast because they are not recognized by archaeologists as fishing gear. Lithics, bone, shell, or organic materials that survived at a site, may have been recovered but their use as fishing gear is not apparent or disguised by having multiple functions. The best examples of prehistoric fishing gear in the region, including netting, net floats, and fish hooks, were excavated from an exceptionally well-preserved site in Key Marco, Florida (Gilliland 1975). Walker (2000) demonstrated that bone or shell tablets, bone points, and grooved shell columella excavated from Key Marco and a nearby site functioned as net-mesh spacers (used to tie a consistent net-mesh size), bone hooks or throat gorges, and net weights, respectively. The only artifacts recovered from Taylor Fish Camp which may fit these types are bone points which are likely too large to have served as fish hooks or throat gorges. The artifacts from southwest Florida provide examples of fishing cultures who lived in a similar environment and targeted a similar group of fishes by designing technology, using local materials, to fit local habitats. For fishing methods to be effective, creators of fishing tackle must consider fish availability and size, fish behavior, water depth, current speed, and tidal range (Walker 2000). Residents of Taylor Fish Camp must

have considered these factors in repetitive pursuit of fishes which move in and out of, and within, a variety of coastal habitats.

The only physical evidence for fishing technology recovered from coastal Georgia sites may come from net-impressed ceramics. Net-impressed pottery sherds have been found in Mississippian period contexts on Sapelo Island (Crook 1984), and Woodland and Mississippian period contexts at the Kings Bay Locality and St. Catherines Island (Epenshade 1985; Thomas 2008c:383). Grog-tempered sherds with net markings identified as Wilmington or St. Catherines types have been recovered from Taylor Fish Camp, including the large sherd from pit feature 7A which produced faunal remains analyzed for this study (Figure 6.1). Radiocarbon samples from the feature indicate contemporaneity with the analyzed midden deposits abundant with small and medium size fishes, which are available in nearby tidal creeks and susceptible to capture with the net-mesh size (3-5 mm) used to impress the vessel. Possession of netting with a mesh size capable of capturing large hauls of fishes which were evidently exploited regularly in shallow, easily-accessible waters strongly point toward use as fishing nets, though they could have had other functions. Some ethnohistoric records mention nets being used for carrying bags and traps for land animals (Larson 1980:117-118; Rostlund 1952:87), but it is doubtful the netting in possession of Taylor Fish Camp had a single, non-fishing purpose. Crook (1984) argues that net-impressed ceramics are unmistakable evidence for the use of fishing nets, and suggests the technology accompanied a shift towards more complex settlement during the transition from Late Woodland cultures to the Savannah Period (Crook 1984).

Nets, weirs, traps, or some combination of mass- and individual-capture fishing techniques used at Taylor Fish Camp would have required multiple people to operate, and therefore planning, organization, and perhaps hierarchical arrangements. Significant amounts of time and energy are needed to build, maintain, and repair these types of gear for regular use. Coordinated labor would have been required to continually staff some types of technologies, haul in catches, transport catch back to the site, then process, prepare for consumption, and perhaps store the dried or smoked fish for later use. These activities probably led to social arrangements during routine fishing activities and may be directly correlated with larger populations in complex communities under development during the Woodland and Mississippian periods (Byrd 1997; Crook 1984). It is also reasonable that more sedentary populations used mass-capture techniques, as the gear is not conducive to frequent movement. Techniques such

Figure 6.1: St. Catherines Net Marked sherd from Feature 7A, 2016 Restroom Facility excavation.

as fishing hooks, darts, spears, or small dip nets are mobile and could have been used by single individuals.

At a minimum, the capture techniques used to exploit the variety of fishes recovered from the site are suggestive of the technical skills and keen awareness of fish behavior. Intimate knowledge of the microhabitats within the estuary, daily tidal cycles, and seasonal shifts in fish availability is necessary for a fishing technique to consistently produce.

Shellfish Collecting. Shellfish collecting would have required less technology but equal knowledge of estuarine habitats and the tidal changes. Oysters occur in dense clumps in intertidal zones throughout the estuaries, including areas easily accessible by foot during low tides. Collecting oysters may have only required a stick or prying device to knock away the dead shells to which the live oysters are attached. Baskets or net bags carried by individuals or small groups of people were likely used. An analysis of oyster-bed locations using the sizes of shells excavated from prehistoric middens on Sapelo Island suggests women and children were the primary collectors, as most of the shell originated from beds which are easily accessible by foot (Crook 1992). Ethnographic accounts from around the globe suggest women and children performed the routine shellfish collecting in societies where shellfish featured as a primary resource (Waselkov 1997). Boats were surely utilized for movement around coastal areas and

were likely used to collect and transport larger amounts of oysters from beds at greater distances and inaccessible by foot, possibly more often by men (Waselkov 1997). Cannon's Point peninsula is surrounded by high marsh and tidal streams where oysters would have been accessible by foot, and where canoes could have been launched for access to oyster reefs on the banks of deeper creeks and channels.

The other mollusks present at Taylor Fish Camp do not occur in extensive shell-beds as oysters do, and may have required slightly different capture techniques. Stout tagelus, which were apparently targeted by residents of the site, do not develop in visible clumps but bury themselves into marsh mud, sometimes fairly deep, in intertidal and subtidal areas. Collecting stout tagelus would have required a digging tool to remove each individual and a bag, basket, or boat for transporting back to the site. Ribbed mussels can occasionally occur among oyster beds but, like the stout tagelus, are usually found in small patches in mud flats. They partially bury themselves in firmer marsh surfaces making them more visible and easily picked up by hand or with a digging tool. Hard clams can also be found among oyster bars but are more commonly concentrated just under the mud surface along the flats and banks of intertidal creeks. Hard clams are easily detected by feet when walking an exposed mud flat or wading in shallow waters then can be picked up by hand. Periwinkles and mud snails can be easily picked off the stems of marsh grass while walking through high marsh areas.

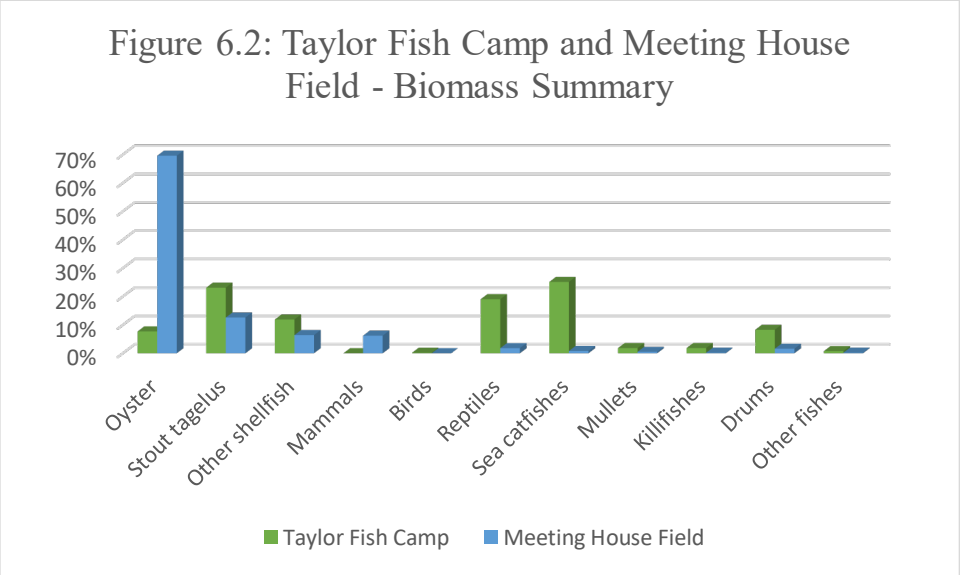
Site Comparisons

Results of this analysis indicate Late Woodland/Early Mississippian period residents of Taylor Fish Camp generally relied on the same aquatic resources as residents of other coastal sites along the Georgia Bight during all prehistoric time periods since the Late Archaic. The subsistence practices used at Taylor Fish Camp follow the regional pattern of focusing heavily on estuarine resources, mainly shellfish and shallow-water fishes, supplemented by turtles, mammals, and birds. This fills an important gap in the prehistoric faunal record from the Georgia Bight, as most fine-screened assemblages are associated with preceding or subsequent time periods. So far, variations in this general pattern of animal use are slight and could be attributed to cultural preference, site location and resulting differences in availability of animal resources (Reitz 1982b; Reitz and Quitmeyer 1988), and archaeological field and lab methods (Reitz 1982b). Comparisons with a closely contemporaneous assemblage on Georgia's coast,

and multiple assemblages from various time periods near the mouth of the Altamaha River, suggest archaeological screen size, sample size, and site locations account for minor differences in interpretations of animal-use.

Two sites (9LI229, 9LI230) at Meeting House Field on St. Catherines Island, approximately 47 km north of Taylor Fish Camp, produced a fine-screened faunal assemblage reported to date from a St. Catherines phase occupation (ca. AD 800 – 1300; Bergh 2012:52, 61-62), offering an opportunity to compare animal-use by Native American groups living on Georgia's barrier islands during the same period. The data used here for comparison are reported from the Early Meeting House Field contexts, where both vertebrates and invertebrates were analyzed (Bergh 2012:101-102). There is a possibility that the assemblage includes a small amount of intrusive early Irene period (ca. AD 1300 – 1580) materials, but a radiocarbon sample from a shell midden at one of the two sites returned a two-sigma date range of AD 910-1140 (Bergh 2012:52, 61-62), closely contemporaneous with the fine-screened materials collected from Taylor Fish Camp for this study (Table 4.2). The analyzed materials from Meeting House Field were collected with 1/8-in screens (Bergh 2012:67), which could have led to less evidence for more frequent capture of small fishes. The Meeting House Field materials assemblage amounts to a much larger assemblage (100,440 NISP; 43,785 MNI; Bergh 2012:116) than the Taylor Fish Camp sample.

Regardless of methodological differences, Meeting House Field and Taylor Fish Camp show similar use of animal resources. Shellfish exploitation at both sites was common, though the Meeting House Field assemblage indicates much heavier use of invertebrates compared with vertebrates (Figure 6.2; Bergh 2012:117). Oyster, stout tagelus, ribbed mussel, and hard clam are the top four contributors of non-commensal invertebrate individuals and estimated biomass at Meeting House Field, with oyster contributing 85% of the individuals to the collection and stout tagelus providing 2% (Bergh 2012:117). These are also top-ranked invertebrate resources at Taylor Fish Camp, but oysters contribute only 25% of the individuals, while stout tagelus provide 8% (Table 5.1). Diversity and equitability measures were calculated using vertebrate and invertebrates from the fine-screened materials from Taylor Fish Camp (Table 5.4). These measures estimate the degree of specialization and do not suggest site inhabitants used subsistence strategies which were strongly selective, though a few taxa were considerably abundant (stout tagelus, eastern oyster, sea catfishes, drums, turtles). Diversity and equitability



Note: Taylor Fish Camp data includes only the fine-screened materials from the 2018 excavation. Figure includes only non-commensal taxa identified to taxonomic family or a more specific taxonomic category. Meeting House Field data are from Bergh (2012:117).

measures of the Meeting House Field materials are low in comparison (H'=0.38 for MNI, H'=1.19 for biomass, V'=0.10 for MNI, V'=0.32 for biomass; Bergh 2012:195) suggesting a more selective approach, as the assemblage is dominated by oysters in terms of individuals and biomass (Figure 6.2; Bergh 2012:117). It is possible that diversity and equitability measures would be lower at Taylor Fish Camp, suggesting a slightly more selective subsistence strategy, if additional midden contexts are analyzed, as higher numbers of shellfish individuals and biomass contributions in comparison to vertebrates are probable in other midden zones. As discussed above, the fine-screened proveniences selected for analysis at Taylor Fish Camp contained visibly higher concentrations of bones than surrounding shell deposits.

The most abundant vertebrate individuals at Meeting House Field were fishes, with drums, catfishes, mullets, and killifishes most prominent (Bergh 2012:116), the same taxa most frequently targeted at Taylor Fish Camp. Turtles provide smaller contributions than fish, with diamondback terrapin contributing the most turtle biomass (Figure 6.2; Bergh 2012:115-116). Minor differences in the two assemblages include invertebrate, fish, bird, and reptile taxa present in the Meeting House Field assemblage (Bergh 2012:114-116) which are not present at Taylor Fish Camp, but their presence in small quantities is probably due to the larger sample size and indicates they were proportionally insignificant resources. A notable difference is the mammal

taxa (mainly white-tailed deer) from the Meeting House Field assemblage which contribute a considerable amount of biomass (6%; Bergh 2012:117), though still much less than shellfish. The white-tailed deer, raccoon, and opossum individuals from Taylor Fish Camp were recovered using 1/4-in screens and were not quantifiably combined with the fine-screened materials, but their presence does show that mammals were pursued at the site. A larger sample, and samples from different locations may reveal the extent of mammal use at Taylor Fish Camp, perhaps closer to that seen at Meeting House Field, but the available evidence indicates a heavier reliance on a core group of shallow-water aquatic resources, a strongly similar subsistence strategy as Late Woodland/Early Mississippian period occupants of St. Catherines Island.

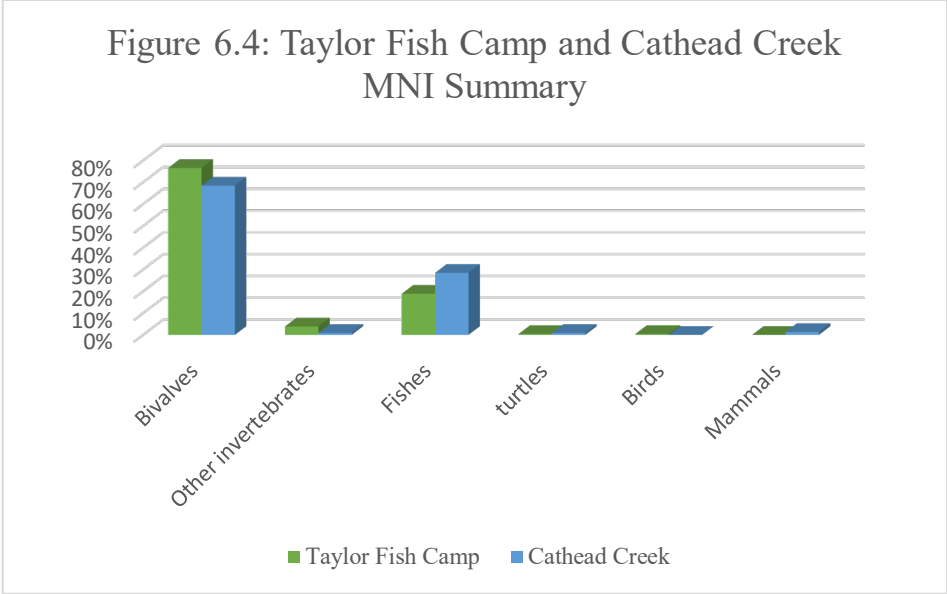
Woodland/Early Mississippian Period Subsistence at the Altamaha River Mouth. Three faunal assemblages recovered from roughly contemporaneous sites near the mouth of the Altamaha River present an opportunity to compare prehistoric subsistence strategies in similar environments. A Middle/Late Woodland period sample from coastal Cathead Creek (9MC360; Reitz and Quitmeyer 1988) provides a valuable comparison of invertebrate and vertebrate use by groups of people who exploited the same estuary, as the materials were collected from a Swift Creek context in a shell midden located on the upper reaches of the Altamaha River Sound, less than 16 km from Taylor Fish Camp (Figure 6.3). Similar sample size and field methods removes common biases and offers a more ideal comparison. The Cathead Creek sample was recovered from multiple zones, also from a single 1 x 1 m unit, and sorted with nested screens down to 0.5 mm in mesh size (Dickinson et al. 1986:5-45; Reitz and Quitmeyer 1988), a finer mesh size than the 1/16 in (1.59 mm) screens used during this study.

Results at Cathead Creek were similar to this study, with minor but expected differences associated with site location. Faunal materials from Cathead Creek indicate shellfish and estuarine fishes were the most dependable resources, in proportions close to those of the fine-screened materials from Taylor Fish Camp, with mammals, turtles, and birds serving as less-important components in the diet (Figures 6.4, 6.5). Like the Taylor Fish Camp assemblage, vertebrates contribute less individuals but more biomass than shellfish (Reitz and Quitmeyer 1988; Quitmeyer and Reitz 2006). Diversity and equitability values of Cathead Creek's materials are close to those at Taylor Fish Camp (H'=1.75 for MNI, H' =2.46 for biomass, and E=0.71 for biomass; Reitz and Quitmeyer 1988; Table 5.4), suggesting similar overall strategies for exploiting the coastal environment. The shell at Cathead Creek, however, are dominated by

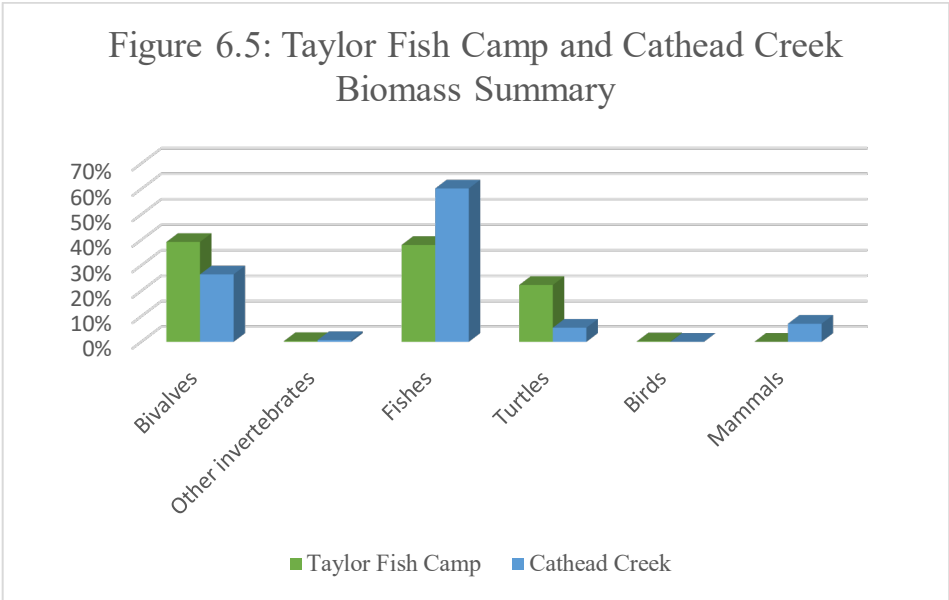
Figure 6.3: Late Woodland/Early Mississippian period sites near Altamaha River mouth; Cathead Creek (9MC360; Reitz and Quitmeyer 1988); 1975 excavations, Cannon's Point site (9GN21; Martinez 1975); North End site (9GN107; Crook 2005; Weinand et al. 2000).

oyster while stout tagelus and ribbed mussel are only present in negligible amounts, and in the case of hard clams, are not present at all (Reitz and Quitmeyer 1988). Occupants of Cathead Creek appear to have relied on oyster while not seeking out the more scattered colonies of other bivalves. Additionally, the nearest living oyster beds are currently several km away from Cathead Creek, possibly a result of modern pollution and overfishing (Reitz and Quitmeyer 1988). Additional research is needed to investigate whether prehistoric inhabitants had access to nearby oyster beds or needed to take long trips to target oysters and bring them back to the site.

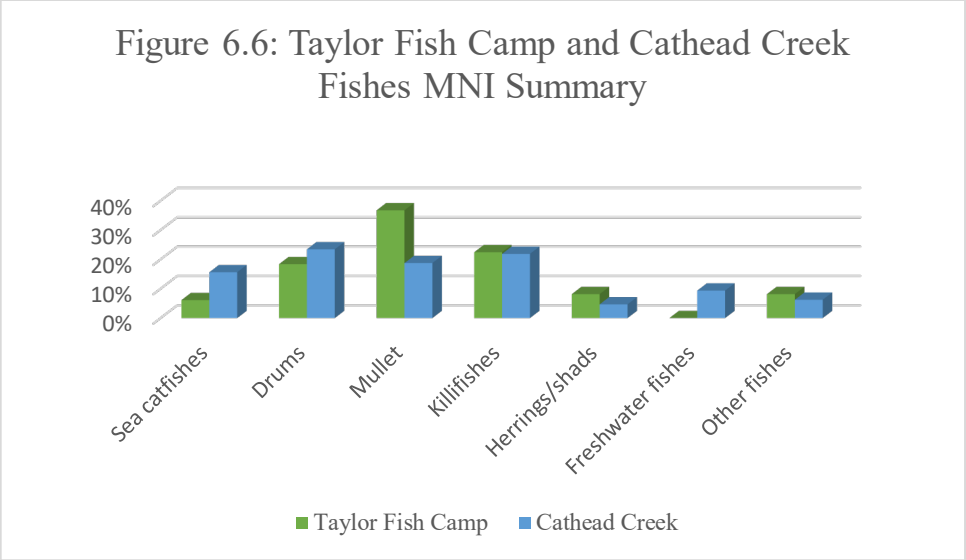
Proportions of the most common fishes represented at Cathead Creek, in terms of MNI and biomass, are remarkably similar to those from Taylor Fish Camp (Figure 6.6, 6.7). Mullet, killifishes, and drums are the top three most abundant individuals from both sites and catfishes are highest ranked in biomass contribution from both locations. Herrings, flounder, and rays contribute smaller amounts of biomass, though rays provide more meat to the Cathead Creek assemblage. This suite of fishes suggests residents of Cathead Creek and Taylor Fish Camp used



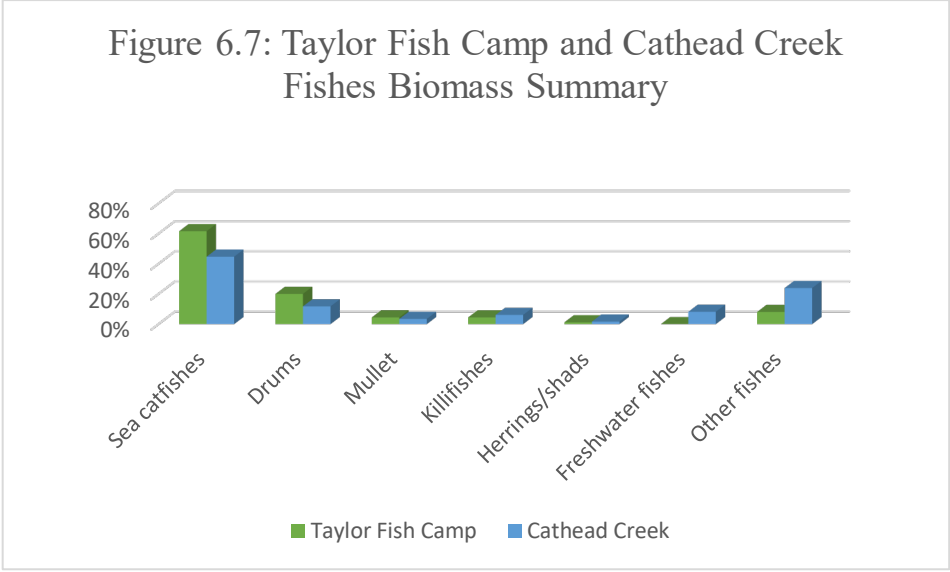
Note: Taylor Fish Camp data includes only the fine-screened materials from the 2018 excavation. Figure includes only non-commensal taxa identified to taxonomic order or a more specific taxonomic category. "Other invertebrates" are marine gastropods and crustaceans. See Reitz and Quitmeyer (1988) for MNI values.



Note: Taylor Fish Camp data includes only the fine-screened materials from the 2018 excavation. Figure includes only non-commensal taxa identified to taxonomic order or a more specific taxonomic category. "Other invertebrates" are marine gastropods and crustaceans. See Reitz and Quitmeyer (1988) for biomass values.



Note: Taylor Fish Camp data includes only the fine-screened materials from the 2018 excavation. Figure includes only non-commensal taxa identified to taxonomic order or a more specific taxonomic category. "Freshwater fishes" are gar, bowfin, pickerel, and bullhead catfish. "Other fishes" are rays/skates, porgies, and flounders. See Reitz and Quitmeyer (1988) for MNI values.

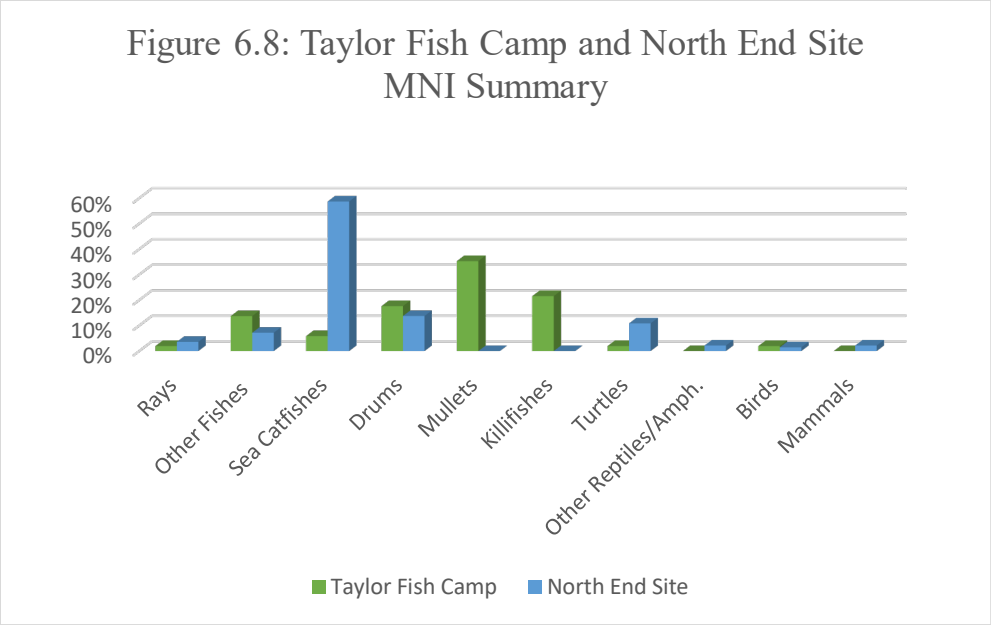


Note: Taylor Fish Camp data includes only the fine-screened materials from the 2018 Taylor Fish Camp excavation. Figure includes only non-commensal taxa identified to taxonomic order or a more specific taxonomic category. "Freshwater fishes" are gar, bowfin, pickerel, and bullhead catfish. "Other fishes" are rays/skates, porgies, and flounders. See Reitz and Quitmeyer (1988) for biomass values.

similar fishing technologies during similar seasons in essentially the same estuary, though separated chronologically by at least two centuries. An interesting difference in fish species at the two sites is the presence/absence of species which prefer very low salinity or even freshwater. Gar, bowfin, pickerel, and bullhead catfish were not identified at Taylor Fish Camp but are present in low numbers at Cathead Creek, likely a result of the site's location farther into the mouth of Altamaha River and its upper estuaries where encounters with those species are more common. This indicates residents of both sites were not venturing far from their settlements to pursue specific fishes but exploited a similar group of dependable resources nearby, occasionally capturing transient and less-common fishes entering the area.

The North End Site (9GN107) on Little St. Simons Island is also indicative of prehistoric subsistence strategies near the mouth of the Altamaha River, where inhabitants depended heavily on a core group of estuarine resources, but periodically utilized taxa which are more likely to appear in habitats surrounding the site. The North End Site is a large shell midden interpreted as a seasonally-occupied "Savannah" period settlement (Crook 2005). The majority of ceramic sherds recovered are grog tempered, which are often associated with Late Woodland and Early Mississippian period occupation of the coast (Wilmington and St. Catherines phases). Radiocarbon samples from a portion of the site returned ninth to twelfth century date ranges, closely contemporaneous with those of Taylor Fish Camp, though some of the midden deposits may contain materials from the Middle Mississippian period, including the Irene phase (Crook 2005). The sites are approximately 5 km apart, with the north end of Little St. Simons Island currently in view from the shoreline at Taylor Fish Camp (Figure 3.3, 6.3).

Vertebrate remains from general midden levels at the site, though sifted through 1/4-in screens, again show an emphasis on oysters and estuarine fishes, with some use of mammals, reptiles, and birds (Crook 2005; Weinand et al. 2000). Catfish, drums, and diamondback terrapins are the most abundant in terms of MNI (Figure 6.8). Biomass estimates were not available for the assemblage. Mullet and killifish are notably absent, probably a result of screen size. Fingerling mullets and killifishes were the most abundant vertebrate individuals from the fine-screened sample at Taylor Fish Camp, nearly all of which were identified in the 1/8-in and 1/16-in fractions (Table 5.5). It is possible that inhabitants of the North End site did not target small mullets or killifish available year-round in nearby shallow, vegetated habitats, but the



Note: Data are from Crook (2005); only specimens identified to taxonomic order or more specific taxonomic categories are included; "other fishes" are sturgeon, freshwater catfishes, striped bass, Atlantic bumperfish, flounder and porgies; "other reptiles" are American alligator and snakes; sea catfishes See Crook (2005) for values.

variety of animals identified at the site does not suggest selectivity or avoidance of particular resources. Smaller screen size would likely reveal exploitation of small fishes.

Additional differences compared to the Taylor Fish Camp assemblage includes the presence of cownose rays (*Rhinoptera bonasus*), Atlantic bumperfish, striped bass (*Morone saxatilis*), sturgeon, sea turtle, and American alligator. Cownose rays are not common in Georgia's estuaries (Dahlberg 1975:31) but are present in considerable numbers at the site (NISP=651; Crook 2005). They were likely captured after chance encounters during spring or fall when cownose rays migrate along the beaches (Crook 2005; Weinand et al. 2000). Atlantic bumperfish are also uncommon in the upper and middle estuaries and more likely to be caught near the beaches (Dahlberg 1975:63). Striped bass are anadromous and may enter the Altamaha River to spawn during the late spring (Hill et al. 1989), making them more vulnerable to capture at the North End site. Sturgeon are also anadromous and more likely to be caught at a location near the Altamaha River sound, a major thoroughfare during the spring when adults enter the rivers from offshore to spawn.

Sea turtles are seasonal species on Georgia's barrier islands, much more likely to have been captured on the beach, where they appear during the summer to lay eggs, or in the deeper sounds where they may have been encountered while fishing from boats (Thomas 2008a:131, 156-161). Alligators can inhabit the brackish waters of salt marshes or freshwater ponds on the island and could have served as a supplement to the typical foods. Timucuan Indians living in northern Florida and southeastern Georgia during the sixteenth century apparently targeted alligators with clubs and arrows, according to ethnohistoric accounts (originally described by Lemoyne in Swanton 1946).

The third faunal assemblage selected for comparison further indicates that Late Woodland/Early Mississippian inhabitants of sites near the Altamaha River mouth exploited animal resources in similar ways, with minor variations also related to location. A master's thesis project recovered 10 qt bulk samples from seven cultural contexts, all variously-sized shell deposits, in six locations on Cannon's Point (Martinez 1975:25, 46-67). Ceramic types and radiocarbon dates indicate five of those contexts date from ca. AD 600 – 1200 (uncalibrated radiocarbon dates from Milanich [1977]; see Appendix A for calibrated dates). Soil samples were screened using 1/8-in mesh and small assemblage of vertebrate remains were analyzed by a University of Florida graduate student (Martinez 1975:25, 83-88). Invertebrates were not analyzed and quantified, but eastern oyster were reported as the most common species, followed by hard clam, ribbed mussel, stout tagelus, and whelk (Martinez 1975:46-68, 85). Biomass estimates are not available for vertebrates since specimens were not weighed. It appears that the maximum distinction method was used for calculating MNI, potentially resulting in larger estimates for individuals than are actually represented, particularly the larger animals recovered such as mammals and sturgeon (Table 6.1). Exact locations of excavations are unclear (Martinez 1975:48).

Regardless of potential biases, the assemblage provides evidence for Late Woodland/Early Mississippian period animal use from multiple locations on a heavily-used and apparently productive peninsula. Ceramic types, radiocarbon dates, and site locations strongly suggest at least some of the faunal materials were deposited by occupants living at or very near Taylor Fish Camp. Results from Martinez's (1975) excavation indicate that shellfish and fishes from estuarine habitats were a mainstay of subsistence efforts. Over half of the vertebrate individuals are fishes, with catfish, drums, mullets, shad, and gar contributing the most

individuals (Table 6.1). The presence of gar suggests that the upper reaches of the estuary were occasionally used, as the species prefers lower salinity or freshwater, though they can occur in marine environments. Individual-capture techniques may have been used, since gars grow to large sizes and often swim lethargically in the upper water column, making them vulnerable to multiple technologies such as spears or darts. Gars are carnivores and can be taken by hook-and-line. Gars frequent the middle estuaries and are also susceptible to mass-capture techniques likely used to catch the core group of fishes in waters adjacent to Cannon's Point peninsula. Gar scales were observed in the unanalyzed materials from Taylor Fish Camp and are likely a small contributor to diet and occasionally targeted when encountered.

Notably, Martinez (1975:60, 86-87, 90-95) reports that a sea turtle, an American alligator, a shark, and at least one large sturgeon, were recovered from Late Woodland/Early Mississippian contexts on the north tip of the peninsula (Figure 6.3) within the vague boundaries of the Cannon's Point Site (9GN21), a large multi-component collection of shell middens. A radiocarbon date returned a 2-sigma range of AD 894-1213 (Appendix A; Milanich 1977; Steiver et al. 2019), closely contemporaneous with the fine-screened sample from Taylor Fish Camp (Table 4.2). As discussed above, sea turtles, alligators, and sturgeon are more likely to be captured near the Altamaha Sound, open water, and deeper channels closer to the River mouth. Lawson (1967:162) reports Native Americans living near inland rivers targeting sturgeon but mentions that groups living on the coast do not eat them. It is possible that one or more of these large fishes and reptiles washed ashore after dying, but it is more probable that the peninsula's inhabitants targeted them when available or pursued them after chance encounters during other activities. According to Martinez (1975:60, 86), their presence at the north end of the peninsula and absence at other sites points toward a specialized hunting/fishing camp. Currently, the north tip of the peninsula is closer to the Hampton River than Taylor Fish Camp is, and was likely closer in the past. This could have led to the creation of processing stations and gave residents easier access to a deeper waterway where sturgeon, sea turtles, and larger fishes are more likely to occur. It is feasible that these rarer and larger taxa represent a different subsistence strategy, as these animals are not common at coastal sites and were not identified at Taylor Fish Camp.

Two additional fish species not present at Taylor Fish Camp, ladyfish and pinfish, were also identified, both of which can be caught throughout the year in the waters surrounding St. Simons Island using the same nets, traps, or weirs used to catch the more common fishes. Mink

(Mustelidae), rabbit, two opossum, four raccoon, and six white-tailed deer individuals are reported from the Late Woodland/Early Mississippian period contexts, a high number of mammal individuals for a relatively small faunal sample (2,840 NISP from all contexts analyzed for the project; Martinez 1975:83) screened with mesh smaller than 1/4-in. Aquatic animals are still more abundant in terms of individuals, but this may represent a stronger emphasis on deer and smaller mammals than is visible at Taylor Fish Camp, but it is more likely that white-tailed deer are over-represented as a result of the maximum distinction method for MNI apparently used for the analysis. Butchering practices and/or disposal habitats may have led to skeletal elements from the same individual being counted twice, as a few of the excavation units look to be in close proximity to each other (Martinez 1975:48, 90). Mammals clearly served a role in the subsistence practices of Native American inhabitants during the period, but further research will be needed to reveal to what extent.

The overriding characteristic of the zooarchaeological evidence collected from Woodland and Mississippian period contexts near the mouth of the Altamaha River is a focus on a core group of shallow-water fishes and shellfish available in areas immediately adjacent to the sites, and opportunistic capture of less-common animals which are likely to appear near those locations.

Prehistoric Vertebrate use at Cannon's Point Peninsula. Faunal remains collected from Taylor Fish Camp can be compared with Late Archaic period (ca. 4000 – 1000 BC) materials for an examination of prehistoric animal-use by Native American groups who occupied the same peninsula over three thousand years earlier. Subsistence practices during the Late Archaic period are well-understood at Cannon's Point, through analysis of a large faunal collection recovered from the Cannon's Point Shell Ring (9GN57) and the West Ring (9GN76; Marrinan 1975, 2010; Figure 3.1). Investigating similarities and differences compared to Late Woodland/Early Mississippian period faunal remains could reveal continuity or change in animal-use strategies by occupants who were separated by millennia but occupied similar environments. The Late Archaic period collection was excavated from units placed less than 3 km north of Taylor Fish Camp, using 1/8-in screens, and is much larger (Cannon's Point Shell Ring, vertebrate NISP: 20,465; West Ring, vertebrate NISP: 9,518; Marrinan 2010) than the Taylor Fish Camp assemblage (vertebrate NISP: 6,542). However, a comparison to the fine-screened sample from Taylor Fish Camp shows that residents had access to, and heavily

exploited, the same suite of resources (Table 6.1). Minor differences in the faunal assemblages are probably attributable to archaeological methods.

Shellfish were not quantified from the shell rings but it was reported that oyster were an overwhelming majority, hard clams were sometimes recovered in clusters, followed by contributions from ribbed mussel, stout tagelus, and whelks (Marrinan 1975:67-98, 2010). These are consistently the most common constituents of coastal shell middens in the region and proved to be the case for Taylor Fish Camp, indicating continuity in the dietary staples for the prehistoric residents of the peninsula.

The vertebrate proportions according to MNI also show remarkable similarity and indicate heavy exploitation of near-shore fishes (Table 6.1). Fishes comprise 94% of vertebrate individuals at Cannon's Point Ring, 96 % at the West Ring, and 96% at Taylor Fish Camp. Turtles, mammals, and birds contribute the remainder from both shell rings. The proportions of fish species are also very similar, with catfishes, drums, mullets, and herrings/shads providing the overwhelming majority of individuals to the shell ring collection. Sea catfishes also supply the most biomass to both Late Archaic samples, followed by drums, and a variety of other species including mullets, herrings/shads, rays, and gars. Fishes not identified at Taylor Fish Camp are gars, bowfin, ladyfish, bullhead catfish, toadfish (*Opsanus* sp.), bluefish, jacks, pinfish, southern kingfish, and sea robin (*Prionotus* sp.). All are represented by either one or two individuals, except the toadfish which is represented by three. All of these species are typically less abundant in archaeological collections from the coast.

Mammals contribute a small percentage of individuals to the Late Archaic sample (less than 2% at both shell rings), but significantly more biomass. No mammals were identified in the fine-screened sample at Taylor Fish Camp, likely a result of its small size. The fine-screened midden zones were not combined with the other coarse-screened samples for quantification, where mammals were identified. The adjacent zones screened with 1/4-in mesh contained single opossum and raccoon specimens (Table 5.7), and the feature screened with 1/4-in contained white-tailed deer and raccoon (Table 5.8), indicating that use of mammals was part of subsistence strategies, but was probably not a regular occurrence. Future analysis of faunal remains recovered from the site using the same field methods would allow for aggregation or comparison of faunal data collected during this study, to better understand the dietary contribution of mammals, and facilitate more ideal quantitative comparisons to other collections.

All the evidence collected so far indicates that, similar to those responsible for creation of the Late Archaic shell rings, Late Woodland/Early Mississippian period inhabitants of Taylor Fish Camp relied most heavily on estuarine fishes and shellfish available year-round in nearby creeks and marshes.

The most notable contrast in the Late Archaic faunal materials is the high number of crab specimens. Nearly two thousand decapod specimens were identified from the shell rings (Marrinan 2010), with a minimum of 81 blue crab individuals represented (Table 6.1). Only one crab individual (likely a blue crab) was identified from Taylor Fish Camp, and two were identified from Martinez's (1975:95) units on the north end of the peninsula. Blue crabs are abundant in the middle and lower estuaries near St. Simons Island and along the Atlantic, especially during the warmer months. They are a popular food in modern times and have been widely-used historically (Torben et al. 2015). Blue crabs were apparently a regular target for Late Archaic groups on Cannon's Point, as crab specimens do not preserve well, but were reportedly recovered from every excavation level of the shell rings (Marrinan 2010).

It is possible that Late Woodland/Early Mississippian inhabitants did not regularly target blue crab, possibly preferring to avoid the taste or the risk of a painful pinch, or perhaps refusing to consume the animal for unknown cultural reasons. However, it is more likely the low numbers are a result of sample size, and possible influence from differential preservation. Typically, chelipeds, anterolateral spines, or mandibles are the only elements recovered, as exoskeletons are rarely preserved (Torben et al. 2015). If boiled in pots along with fish, the fragile skeleton would be even less-likely to survive. Additionally, the elements which do survive can be easily mistaken for mollusk fragments, and 1/4-in screens are less likely to recover crab remains. Parts that do survive may be from fiddler (*Uca* sp.) or stone crabs (*Menippe mercenaria*), but the greater abundance of blue crab and the size and shape of cheliped teeth make blue crab the most likely identification (Torben et al. 2015). Late Woodland/Early Mississippian faunal remains were recovered using fine screens from multiple locations on the peninsula but within relatively small midden zones (this study) and small bulk samples (Martinez 1975). Cheliped teeth were observed in multiple proveniences while sorting the unanalyzed materials collected during this project. It is more likely that crabs served as a reliable resource at Taylor Fish Camp and will be better represented in additional fine-screened materials.

Blue crabs can be easily taken from creeks, tidal flats, and channel banks during warmer months, especially late spring and early summer while they are mating near shore, but retreat to deeper waters during the winter. Blue crabs prey on oysters and are abundant on oyster reefs (Geraldi et al. 2009), which were clearly an important part of subsistence strategies at Taylor Fish Camp and other prehistoric sites along the coast. They could have been scooped with dip or seine nets, baited with traps, or picked up with bare hands, a stick, or a tong (Quitmeyer 1985:29). Shrimp are less-likely to be preserved and identified and also probably served as a dependable food resource (Reitz and Quitmeyer 1988), as they are ubiquitous in tidal creeks during warmer months and could have been easily captured using the fine-mesh nets needed to capture the small fishes present at Taylor Fish Camp. None was identified in collections from Cannon's Point.

The lack of killifish in the Late Archaic collection could be related to field methods. Only four individuals were identified in the much larger faunal assemblages from the shell rings, while eleven individuals were identified from Taylor Fish Camp. As shown in Table 5.5, nearly all killifish and fingerling mullet specimens were present in the 1/16-in fraction. The materials from the shell rings were screened using 1/8-in mesh, possibly losing substantial amounts of killifishes, and perhaps fingerling mullets, and small drums. However, an increase in the proportions of killifishes in archaeological collections from the Georgia Bight is observed after the Late Archaic period, which may not be related to screen size (Reitz 2014). Bergh (2012:81, 204) suggests the increase is related to an increase in oyster use at some sites. Since killifishes are common over oyster beds (Grabowski et al. 2005), they may have been by-catch while groups were collecting more oyster and are evidence of resource depression of other fishes (Bergh 2012:81, 204; Reitz 2014). The Taylor Fish Camp sample does not support this, as killifishes are abundant but oysters contribute a low number of individuals and biomass. Reitz (2014) suggests the increase in killifishes are evidence of either environmental changes, seasonal schedules, technological changes, or the more likely scenario, a difference in habitats fished. Fine-mesh nets needed to capture killifishes must have been used to catch other small species present in the same collections in which killifishes are low or absent (Reitz 2014). The common killifish species are more abundant in shallower, high salinity waters and may have been targeted more often on beaches or vegetated high marsh areas by Woodland and Mississippian period groups (Reitz 2014). I presume that Late Archaic residents of Cannon's Point did periodically

use those fishing strategies as did Late Woodland/Early Mississippian occupants of Taylor Fish Camp, but they are evident in pockets within shell deposits and are more likely to be recovered using screens finer than 1/8-in.

Settlement at Taylor Fish Camp during the Woodland to Mississippian Period Transition

Visits by archaeologists early in the twentieth century and later excavations at Taylor Fish Camp have led to suggestions that the site is, in part, a Middle and Late Mississippian period village associated with the nearby Taylor Mound. The site was first recorded as one the largest shell middens on St. Simons Island, featuring massive shell piles and numerous prehistoric pottery types. A series of recent salvage collections and limited excavations have revealed the complex, dense, and multi-component nature of the location, recovering artifacts and archaeological features associated with every cultural period from the Late Archaic period to the early twentieth century. The current study is not able to fully define the site, as the location will require further research, at minimum, to better understand the boundaries and content. A synthesis of data was completed for this study, however, to provide an up-to-date account of prehistoric evidence collected from the location during previous projects. Many of the projects have not produced a report, produced a report with minimal interpretation of prehistoric data, or have collected artifacts which have yet to be analyzed. Still, the collection of pottery types (Table 3.1) and features recorded during past projects, along with pottery types and radiocarbon dates produced during this study (Tables 4.1, 4.2), indicate the bulk of archaeological materials, and possibly the heaviest settlement of the location, originate from the Late Woodland to Early Mississippian periods.

The faunal remains analyzed during this study were recovered from multiple deposits which produced radiocarbon dates bracketed between ca. AD 700 and 1160, with the latter centuries of that range the more likely timeframe (Table 4.2). Wilmington, St. Catherines, and Savannah pottery types were in association with those proveniences. These types and associated cultures/phases are unresolved on Georgia's coast and have been shown to overlap, with Wilmington sites extending farther back into the Late Woodland period and "Savannah" sites often interpreted as extending into the Late Mississippian period (Bense 1994:211-212; Crook 1978; Milanich 1977; Reitz 1982a, 1988; Thomas 2008c:414-420, 2008b:1014-1035). The predominance of grog-tempered ceramics, the uncertainty involved in distinguishing between

pottery types, and the convergence of radiocarbon date ranges on the ninth to twelfth centuries, suggest the bulk of the general midden levels and faunal materials deposited are associated with a transitional period from the Late Woodland to Early Mississippian, sometimes referred to on the coast as the St. Catherine's phase (ca. AD 800 – 1300; Thomas 2008b:846; Bergh 2012:52).

Sites from the St. Catherines phase on St. Catherines Island suggest a change in settlements from previous periods (Bergh 2012:52-54). Sites are higher in number and in size than the previous Wilmington phase (Thomas 2008b:1029, 1049-1051) and include pit features and burials which indicate potential changes in social status and a larger group of people, occupying the sites during multiple seasons (Larsen and Thomas 1982:293-325; Thomas 2008b:1031). These characteristics, if present, are generally not yet visible at Taylor Fish Camp, and the number and extent of Late Woodland/Early Mississippian sites at the site and on the peninsula are unknown. Further investigation at the site could reveal how settlement at Taylor Fish Camp during the period relates to contemporaneous sites on the coast. Currently, the dense volume of shell deposits, potential pit features and structures (Figures 4.5, 4.6, 4.8; Honerkamp 2014), high number of Wilmington/St. Catherines vessels, and year-round availability of intensively exploited faunal resources identified during this study, suggest the site is more substantial than a small, seasonal processing/fishing camp. A residential multi-seasonal settlement seems likely, and year-round occupation, with close access to dependable estuarine resources, is possible.

Sites from previous Late Woodland occupations are usually associated with Swift Creek or Wilmington cultures. Swift Creek sites on Georgia's coast are typically small artifact scatters or variously sized shell deposits, some of which are large arc- or horseshoe-shaped middens near bluff edges (Ashley et al. 2007; Ashley and Wallis 2006; Wallis 2011). Settlement and community patterns of coastal Swift Creek cultures are often difficult to recognize due to the multicomponent, intensively-occupied nature of shell middens (Ashley and Wallis 2006; Ashley et al. 2007). Wilmington sites appear during the Late Woodland period on Georgia's southern coast, but a more precise chronology and associated cultural characteristics are unclear, especially for St. Simons Island (Milanich 1977). The Wilmington type-site, on a marsh island near the mouth of the Savannah River, consists of villages and a very large shell midden, but most sites associated with these ceramics are small, shell deposits (Reitz 1988; Thomas 2008b).

Much more research is required to understand the settlement type at Taylor Fish Camp during the Late Woodland/Early Mississippian period.

Sites associated with Savannah ceramics are numerous on the coast and barrier islands, including small shell-deposits, large middens, domestic structures, burial mounds, and a possible platform mound at Kenan Field on Sapelo Island (Crook 1986). The appearance of settlement hierarchies during the Savannah phase, in the form of larger mound sites surrounded by smaller seasonal camps, are the main indicators of the emergence of Mississippian culture on the coast (Bense 1994:211-212; Crook 1986). Taylor Fish Camp clearly has Savannah ceramics and Middle Mississippian period contexts, in the form of refuse pits with reliable radiocarbon dates (Table 4.2), and likely represents more than a seasonal camp but more research is needed to understand its relationship to emerging Mississippian period sites on the coast. The faunal evidence collected during this study, and archaeological evidence from previous projects, does not suggest the use of horticulture or reveal Mississippian characteristics. Subsistence practices at the location appear to have remained largely unchanged during transition between the periods, emphasizing estuarine resources.

Summary and Conclusions

The Taylor Fish Camp faunal assemblage provides an opportunity to investigate subsistence practices of Native Americans living in coastal Georgia during a poorly-understood period. Analysis of the materials reveal Late Woodland/Early Mississippian periods residents of northern St. Simons Island followed a similar subsistence pattern as occupants of prehistoric sites along the southern Atlantic coast and barrier islands, focusing heavily on aquatic resources. Faunal remains from the site indicate heavy use of the shallow water estuaries near the site and lesser use of terrestrial resources. Shellfish and estuarine fishes were the major emphasis, while turtles and mammals such as white-tailed deer, raccoon and opossum provided supplementary resources.

The identification of mammals in a feature and little presence in general midden deposits suggest they were not a regular target and may have been consumed infrequently. Future analysis of contemporaneous materials from the site, preferably from different locations, might help reveal the relative contribution of mammals to the diet. The current study suggests, similar to most other prehistoric coastal sites in the region, inhabitants did not regularly pursue terrestrial

targets. The samples from general midden levels are relatively homogenous, indicating routine exploitation of bivalves and fishes. Stout tagelus, oyster, ribbed mussel, and hard clam were dietary staples and periwinkle and mud snail were occasionally consumed. The concentration of stout tagelus within the shell midden suggest they were periodically targeted by residents on foraging trips. Their presence in the unanalyzed materials suggest it was not a single episodic event but possibly a regular occurrence.

The use of fine screens during excavation confirms the importance of fishing to the community. Sea catfishes, drums, mullets, killifishes, and herrings/shads were the most abundant families, a suite of fishes similar to other fine-screened assemblages from the coastal region. A notable difference at Taylor Fish Camp is the abundance of fingerling mullet and killifish specimens, nearly all of which would have been lost if using 1/8- or 1/4-in screens. The high volume of small fishes present in shell deposits at inhabited locations indicate they were pursued and transported back to sites for consumption. These taxa do not contribute a huge amount of meat to the diet, but possibly represent a different fishing activity. Killifishes and fingerling mullets are more likely captured with small dip nets or basket scoops in shallow, vegetated waters or beach shorelines. Those areas are easily accessed by foot and may represent activities performed by all ages. Killifishes, fingerling mullet, and other small fishes, are likely to be evidence of subsistence behavior best observed through use of 1/16-in screens, but the time and effort required to water screen, dry, transport, sort, identify, analyze, catalog, and curate materials collected with that screen size precludes it being used for all excavated shell deposits.

Residents of the site appear selective in choosing to exploit estuarine resources but non-selective in choosing the species of fishes. The more abundant fishes in the estuaries are the more abundant fishes in the assemblage, assuming the environment and fish populations have changed little since the Late Woodland period. Multiple habitats and productive ecozones were available but inhabitants chose the estuary as a focus. There appears to be little use of beaches, offshore waters, or riverine resources. Larger individuals and less-common brackish and marine fishes are more likely to be identified in a larger sample, and were probably pursued when encountered or consumed when inadvertently captured, but the core group of species are readily available in the creeks, channels, tidal pools, and mudflats immediately adjacent to northern St. Simons Island. Taylor Fish Camp was an effective location for settlement, as a large catchment area is not required to exploit the abundant estuarine resources. Oyster beds were a particular

focus, as multiple species of shellfish and fishes are attracted to those areas and were identified in the assemblage; the collection of shellfish and capture of fishes may have been complimentary subsistence activities.

Few taxa are highly seasonal around Georgia's barrier islands. Negative evidence is not particularly valuable, but none of the highly seasonal animals were identified at the site. All taxa present in the assemblage are potentially found in the area throughout the year, but many are more abundant during the warmer months. As Reitz and colleagues (2014:81) state, "seasonality in the Georgia Bight appears to be more of a question of where and how rather than what or when." Residents clearly emphasized the resources which were available all year, and along with limited evidence of a dense occupation at the site, this suggests at least a multi-seasonal settlement.

To continually pursue estuarine resources, residents of the site must have been strongly familiar with their natural habitats, seasonal shifts, daily tidal swings, the effect of weather on animal resources, and subtle characteristics of fish behavior. Fishing technologies were designed to accommodate for these factors and provide the necessary resources. The sizes of fishes present at the site, the variety of species identified, and their typical habits and habitats indicate mass-capture techniques such as weirs, traps, and nets were most commonly used. Individual capture technologies such as spears or hook-and-line were possibly used periodically. Ethnohistoric accounts also suggest the mass-capture techniques were common in the region, and net-impressed ceramics recovered from Taylor Fish Camp further indicate netting was used. These techniques required planning, cooperation, scheduling, and routine interaction with marshes and estuaries.

Comparisons with roughly contemporaneous communities on the coast show similar subsistence strategies closely tied to fishing and shell fishing. Variations in the pattern are most likely related to site location. Woodland and Early Mississippian groups living near the marshes and estuaries around the mouth of the Altamaha River appear to have exploited nearby resources, with slight changes in catch content associated with minor differences in the habitats bordering the sites. Larger, less-common, and more seasonal animals, and fishes which prefer less saline waters, are identified at sites where they are more likely to occur. Prehistoric residents of the Altamaha River mouth appear to have chosen productive areas for settlement, regularly exploiting the most common estuarine resources and taking advantage of occasional appearances

by less-common animals. A comparison with Late Archaic animal-use on Cannon's Point reveals Taylor Fish Camp inhabitants focused on the same shallow-water resources as their predecessors on the peninsula. Taylor Fish Camp residents may have captured killifishes more often, but the difference is more likely a result of archaeological screen size. This study sheds further light on the variety and apparently dependable estuarine resources which continued to attract prehistoric residents to the peninsula.

Further research should attempt to expand the size of the faunal sample by analyzing contemporaneous midden deposits collected during this study. A level of redundancy was reached during the identification process, but a larger sample is required to reveal subtle differences in the estuarine pattern. Stout tagelus and killifish were abundant in the sample; future analysis would help to reveal the extent of their contribution to the resource base. A small amount of floral remains was observed in the unanalyzed materials; ethnobotanical analysis would add valuable evidence to potential subsistence practices. Future research could also include size reconstructions and growth-ring analysis of hard clams or fish otolith from the assemblage to refine the seasons of capture, potential locations, and capture technologies.

Table 6.1: Comparison of Vertebrate Individuals (MNI) from Cannon's Point

Taxon		Late Woodland/Early Mississippian (ca. AD 600 - 1200)			Late Archaic (ca. 1970 - 2760 BC)	
		Taylor Fish Camp (2014 midden deposits, 2016 pit feature) 1/4"	Various sites[a] 1/8"	Taylor Fish Camp (2018 midden deposits) 1/16"	Cannon's Point Shell Ring 1/8"	West Ring 1/8"
Didelphis virginiana	Eastern opossum	1 (5.6%)	1 (1.4%)		1 (0.3%)	1 (0.4%)
Sylvilagus sp.	Rabbits		1 (1.4%)		1 (0.3%)	1 (0.4%)
Mustela vison	American mink		2 (2.8%)			
Sciurus carolinensis	Gray squirrel				1 (0.3%)	
Procyon lotor	Raccoon	2 (11.1%)	4 (5.6%)		2 (0.6%)	1 (0.4%)
Odocoileus virginanus	White tailed deer	1 (5.6%)	6 (8.5%)		1 (0.3%)	1 (0.4%)
Total Mammals		**4 (22.2)%)**	**14 (19.7%)**	**0**	**6 (1.8%)**	**4 (1.6%)**
Aves	Unidentified birds		1 (1.4%)	1 (2.0%)		1 (0.4%)
Ardea herodias wardii	Great blue heron				1 (0.3%)	
Rallidae	Rails		1 (1.4%)		3 (0.9%)	1 (0.4%)
Buteo lineatus alleni	Red-shouldered hawk				1 (0.3%)	
Total Birds		**0**	**2 (2.8%)**	**1 (2.0%)**	**5 (1.5%)**	**2 (0.8%)**
Chelonidae	Sea turtles		1 (1.4%)			
Chelydra serpentina	Snapping turtle	1 (5.6%)				
Kinosternidae	Mud or musk turtles				2 (0.6%)	1 (0.4%)
Trachemys sp.	Pond slider		3 (4.2%)		2 (0.6%)	1 (0.4%)
Malaclemys terrapin	Diamondback terrapin		9 (12.7%)	1 (2.0%)	2 (0.6%)	2 (0.8%)
Total Turtles		**1 (5.6%)**	**13 (18.3%)**	**1 (2.0%)**	**6 (1.8%)**	**4 (1.6%)**
Alligator mississippiensis	American alligator		2 (2.8%)			
Serpentes	Unidentified snakes					1 (0.4%)
Natrix sp.	Water snakes				1 (0.3%)	
Coluber constrictor	Black racer		1 (1.4%)		1 (0.3%)	
Pituophis melanoleucus	Pine snake		1 (1.4%)			
Lampropeltis sp.	Kingsnake				1 (0.3%)	
Total Other Reptiles		**0**	**4 (5.6%)**	**0**	**3 (0.9%)**	**1 (0.4%)**
Carcharhinidae	Requiem sharks		1 (1.4%)			
Galeocerdo cuvieri	Tiger shark				1 (0.3%)	
Sphyrna sp.	Bonnethead shark				1 (0.3%)	
Myliobatiformes	Stingrays		4 (5.6%)	1 (2.0%)		
Myliobatidae	Eagle rays				3 (0.9%)	1 (0.4%)
Aetobatus narinari	Spotted eagle ray				1 (0.3%)	
Total Sharks and Rays		**0**	**5 (7.0%)**	**1 (2.0%)**	**6 (1.8%)**	**1 (0.4%)**
Acipenser oxyrinchus	Atlantic sturgeon		1 (1.4%)			
Lepisosteus sp.	Gar		4 (5.6%)		1 (0.3%)	1 (0.4%)
Amia Calva	Bowfin				1 (0.3%)	
Elops saurus	Ladyfish		1 (1.4%)		1 (0.3%)	1 (0.4%)
Clupeidae	Herrings/shads		4 (5.6%)	4 (7.8%)	40 (11.8%)	30 (12.2%)
Ameiurus sp.	Freshwater catfish/bullhead				1 (0.3%)	
Ariidae	Sea catfishes		9 (12.7%)		38 (11.2%)	28 (11.4%)
Ariopsis felis	Hardhead catfish	4 (22.2%)	*1*	1 (2.0%)	*18*	*8*
Bagre marinus	Gaftopsail catfish	7 (38.9%)	*4*	2 (3.9%)	*18*	*16*
cf. *Mugil* sp.	Probable mullets		4 (5.6%)	18 (35.3%)	79 (23.3%)	30 (12.2%)
Fundulidae/Cyprinodontidae	Killifishes			11 (21.6%)	4 (1.2%)	
Opsanus sp.	Toadfish				3 (0.9%)	
Pomatomus saltatrix	Bluefish				1 (0.3%)	
Carangidae	Jacks				1 (0.3%)	1 (0.4%)
Lagodon rhomboides	Pinfish		1 (1.4%)		1 (0.3%)	
Archosargus probatocephalus	Sheepshead	1 (5.6%)	1 (1.4%)	1 (2.0%)		1 (0.4%)
Sciaenidae	Drums/croakers		1 (1.4%)			
Cynoscion sp.	Sea trouts/weakfishes			1 (2.0%)	11 (3.2%)	14 (5.7%)
Bairdiella chrysoura	Silver perch		2 (2.8%)	2 (3.9%)	31 (9.1%)	25 (10.2%)
Sciaenops ocellatus	Red drum			1 (2.0%)	5 (1.5%)	4 (1.6%)
Pogonias cromis	Black drum		3 (4.2%)	1 (2.0%)	5 (1.5%)	2 (0.8%)
Stellifer lanceolatus	Star drum			1 (2.0%)	2 (0.6%)	13 (5.3%)
Leiostomus xanthurus	Spot			1 (2.0%)	32 (9.4%)	11 (4.5%)
Menticirrhus americanus	Whiting/southern kingfish				2 (0.6%)	
Micropogonias undulatus	Croaker			2 (3.9%)	51 (15.0%)	71 (28.9%)
Prionotus sp.	Searobin				1 (0.3%)	
Paralichthyidae/Bothidae	Flounders	1 (5.6%)	2 (2.8%)	2 (3.9%)	2 (0.6%)	2 (0.8%)
Total Fishes		**13 (72.2%)**	**33 (46.5%)**	**48 (94.1%)**	**313 (92.3%)**	**234 (95.1%)**
Total Vertebrates		**18**	**71**	**51**	**339**	**246**
Brachyura/*Callinectes* sp.	Crab/swimming crab	0	2	1	78	3

Note: MNI refers to the minimum number of individuals. MNI calculations in italics for hardhead and gafftopsail catfish are included in totals for sea catfishes (Ariidae). Commensal species are not included in this table. Data from Cannon's Point Shell Ring (9GN57) and West Ring (9GN76) are from Marrinan (1975, 2010).

[a] Data are from Martinez (1975) and Milanich (1977). Proveniences included in this table are Test A, B-C, D, E-Deptford, and F (see Martinez 1975: 46-67).

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APPENDIX A

CALIBRATED RADIOCARBON DATES FROM MILANICH (1977) AND MARTINEZ (1975)

```
RADIOCARBON CALIBRATION PROGRAM*
                                CALIB REV7.1.0
                  Copyright 1986-2018 M Stuiver and PJ Reimer
          *To be used in conjunction with:
          Stuiver, M., and Reimer, P.J., 1993, Radiocarbon, 35, 215-230.

 Sample ID   TEST D (Martinez 1975)
 Lab Code
 Sample Description
 Radiocarbon Age BP   1130 +/-   70
 Calibration data set: intcal13.14c               # Reimer et al. 2013
   % area enclosed       cal AD age ranges            relative area under
                                                   probability distribution
   68.3 (1 sigma)     cal AD 778- 791                      0.068
                             805- 815                      0.047
                             825- 841                      0.077
                             862- 988                      0.809
   95.4 (2 sigma)     cal AD 711- 745                      0.036
                             764- 1025                     0.964
   Median Probability:   897


Sample ID   TEST E-upper (Martinez 1975)
 Lab Code
 Sample Description
 Radiocarbon Age BP   1300 +/-   80
 Calibration data set: intcal13.14c               # Reimer et al. 2013
   % area enclosed       cal AD age ranges            relative area under
                                                   probability distribution
   68.3 (1 sigma)     cal AD 648- 777                      0.917
                             792- 802                      0.039
                             844- 857                      0.045
   95.4 (2 sigma)     cal AD 599- 896                      0.989
                             927- 942                      0.011
   Median Probability:   733


Sample ID   TEST A  (Martinez 1975)
 Lab Code
 Sample Description
 Radiocarbon Age BP   1190 +/-   70
 Calibration data set: intcal13.14c               # Reimer et al. 2013
   % area enclosed       cal AD age ranges            relative area under
                                                   probability distribution
   68.3 (1 sigma)     cal AD 721- 740                      0.086
                             767- 898                      0.813
                             924- 945                      0.101
```

```
   95.4 (2 sigma)     cal AD 682- 981                    1.000
   Median Probability:   832


 Sample ID   TEST B-C (Martinez 1975)
 Lab Code
 Sample Description
 Radiocarbon Age BP    990 +/-   75
 Calibration data set: intcal13.14c              # Reimer et al. 2013
   % area enclosed       cal AD age ranges           relative area under
                                                  probability distribution
   68.3 (1 sigma)     cal AD 987- 1058                   0.484
                             1067- 1073                  0.024
                             1075- 1154                  0.492
   95.4 (2 sigma)     cal AD 894- 931                    0.056
                             937- 1213                   0.944
   Median Probability:  1057


Sample ID    TEST F (Martinez 1975)
 Lab Code
 Sample Description
 Radiocarbon Age BP   1060 +/-   70
 Calibration data set: intcal13.14c              # Reimer et al. 2013
   % area enclosed       cal AD age ranges           relative area under
                                                  probability distribution
   68.3 (1 sigma)     cal AD 891- 1029                   1.000
   95.4 (2 sigma)     cal AD 776- 794                    0.022
                             799- 1053                   0.874
                             1079- 1152                  0.104
   Median Probability:   970


Sample ID    TEST G-1 (Martinez 1975)
 Lab Code
 Sample Description
 Radiocarbon Age BP    710 +/-   75
 Calibration data set: intcal13.14c              # Reimer et al. 2013
   % area enclosed       cal AD age ranges           relative area under
                                                  probability distribution
   68.3 (1 sigma)     cal AD 1224- 1234                  0.056
                             1242- 1314                  0.683
                             1356- 1388                  0.261
   95.4 (2 sigma)     cal AD 1170- 1175                  0.006
                             1181- 1407                  0.994
   Median Probability:  1287


Sample ID   TEST G-2 (Martinez 1975)
 Lab Code
 Sample Description
 Radiocarbon Age BP    510 +/-   75
 Calibration data set: intcal13.14c              # Reimer et al. 2013
   % area enclosed       cal AD age ranges           relative area under
                                                  probability distribution
```

```
   68.3 (1 sigma)     cal AD 1314- 1356                    0.316
                             1388- 1453                    0.684
   95.4 (2 sigma)     cal AD 1287- 1519                    0.970
                             1593- 1619                    0.030
   Median Probability:  1410

References for calibration datasets:
 Reimer PJ, Bard E, Bayliss A, Beck JW, Blackwell PG, Bronk Ramsey C, Buck CE
 Cheng H, Edwards RL, Friedrich M, Grootes PM, Guilderson TP, Haflidason H,
 Hajdas I, Hatté C, Heaton TJ, Hogg AG, Hughen KA, Kaiser KF, Kromer B,
 Manning SW, Niu M, Reimer RW, Richards DA, Scott EM, Southon JR, Turney CSM,
 van der Plicht J.
 IntCal13 and MARINE13 radiocarbon age calibration curves 0-50000 years calBP
 Radiocarbon 55(4). DOI: 10.2458/azu_js_rc.55.16947

 Comments:
 * This standard deviation (error) includes a lab error multiplier.
 ** 1 sigma = square root of (sample std. dev.^2 + curve std. dev.^2)
 ** 2 sigma = 2 x square root of (sample std. dev.^2 + curve std. dev.^2)
 where ^2 = quantity squared.
 [ ] = calibrated range impinges on end of calibration data set
 0* represents a "negative" age BP
 1955* or 1960* denote influence of nuclear testing C-14

 NOTE:  Cal ages and ranges are rounded to the nearest year which
        may be too precise in many instances.  Users are advised to
        round results to the nearest 10 yr for samples with standard
        deviation in the radiocarbon age greater than 50 yr.
```

APPENDIX B

CENTER FOR APPLIED ISOTOPE STUDIES, UNIVERSITY OF GEORGIA,
RADIOCARBON TESTING RESULTS FROM TAYLOR FISH CAMP

1785
The University of Georgia
Center for Applied Isotope Studies

RADIOCARBON ANALYSIS REPORT

November 16, 2018

Scott Clark
Georgia Southern University
Sociology and Anthropology Department
Carrol Building, Room 103
P.O. Box 8051
Statesboro, GA 30460

Dear Dr. Clark,

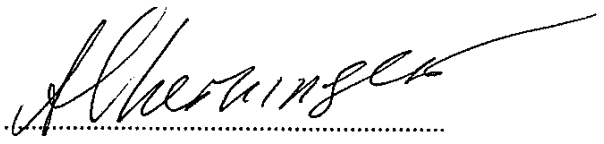
Enclosed please find the results of ^{14}C Radiocarbon analyses and Stable Isotope Ratio ™^{13}C analyses for the samples received by our laboratory on October 31, 2017.

UGAMS#	Sample ID	Material	$\delta^{13}C$,‰	^{14}C age years, BP	±	pMC	±
38640	01	charcoal	-28.17	840	20	90.11	0.22
38641	02	charcoal	-26.77	720	20	91.36	0.22
38642	03	charcoal	-25.88	1070	20	87.54	0.22
38643	04	charcoal	-24.24	730	20	91.36	0.23
38644	05	charcoal	-26.98	1080	20	87.39	0.22
38645	06	charcoal	-23.59	1040	20	87.88	0.22
38646	07	charcoal	-25.14	1210	20	86.03	0.21
38647	08	deer bone	-20.60	920	20	89.23	0.22
38648	09	nut	-27.12	960	20	88.75	0.22
38649	10	charcoal	-26.85	1230	20	85.84	0.21
38650	11	nut	-23.74	940	20	88.99	0.22
38651	12	nut	-26.25	880	20	89.60	0.22
38652	13	nut	-25.32	890	20	89.50	0.22

UGAMS#	Sample ID	Material	$\delta_{13}C$,‰	$\delta_{15}N$,‰	C/N
38647	08	collagen	-20.6	6.34	3.23

The charcoal and nut samples were treated with 5% HCl at the temperature 80°C for 1 hour, then they was washed and with deionized water on the fiberglass filter and rinsed with diluted NaOH to remove possible contamination by humic acids. After that it was treated with diluted HCL again, washed with deionized water and dried at 60°C. For accelerator mass spectrometry analysis the cleaned samples were combusted at 900°C in evacuated / sealed ampoules in the presence of CuO. The bone was cleaned by wire brush and washed, using ultrasonic bath. After cleaning, the dried bone was gently crushed to small fragments. The crushed bone was treated with 1N HCl to dissolve the bone mineral and release carbon dioxide from bioapatite. The residue was filtered, rinsed with deionized water and under slightly acid condition (pH=3) heated at 80ºC for 6 hours to dissolve collagen and leave humic substances in the precipitate. The collagen solution is then filtered to isolate pure collagen an ddried out. The dried collagen was combusted at 575ºC in evacuated/sealed Pyrex ampoule in the present CuO. The resulting carbon dioxide was cryogenically purified from the other reaction products and catalytically converted to graphite using the method of Vogel *et al*. (1984) Nuclear Instruments and Methods in Physics Research B5, 289-293. Graphite 14C/13C ratios were measured using the CAIS 0.5 MeV accelerator mass spectrometer. The sample ratios were compared to the ratio measured from the Oxalic Acid I (NBS SRM 4990). The sample 13C/12C ratios were measured separately using a stable isotope ratio mass spectrometer and expressed as δ13C with respect to PDB, with an error of less than 0.1‰. The quoted uncalibrated dates have been given in radiocarbon years before 1950 (years BP), using the 14 C half-life of 5568 years. The error is quoted as one standard deviation and reflects both statistical and experimental errors. The date has been corrected for isotope fractionation.

Sincerely,



Alexander Cherkinsky, Ph.D.
Senior Research Scientist

120 Riverbend Road • Athens, Georgia 30602-4702
Telephone 706-542-1395 • Fax 706-542-6106 • www.cais.uga.edu
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RADIOCARBON CALIBRATION PROGRAM*                                    CALIB
REV7.1.0                  Copyright 1986-2018 M Stuiver and PJ Reimer
*To be used in conjunction with:          Stuiver, M., and Reimer, P.J.,
1993, Radiocarbon, 35, 215-230.

01
38640
charcoal
Radiocarbon Age BP    840 +/-   20
Calibration data set: intcal13.14c              # Reimer et al. 2013
% area enclosed       cal AD age ranges           relative area under
                                                probability distribution
68.3 (1 sigma)     cal AD 1169- 1175                    0.077
                          1181- 1222                    0.923
95.4 (2 sigma)     cal AD 1164- 1249                    1.000
Median Probability:  1203

02
38641
charcoal
Radiocarbon Age BP    720 +/-   20
Calibration data set: intcal13.14c              # Reimer et al. 2013
% area enclosed       cal AD age ranges           relative area under
                                                probability distribution
68.3 (1 sigma)     cal AD 1272- 1284                    1.000
95.4 (2 sigma)     cal AD 1264- 1291                    1.000
Median Probability:  1277

03
38642
charcoal
Radiocarbon Age BP   1070 +/-   20
Calibration data set: intcal13.14c              # Reimer et al. 2013
% area enclosed       cal AD age ranges           relative area under
                                                probability distribution
68.3 (1 sigma)     cal AD 970- 1013                     1.000
95.4 (2 sigma)     cal AD 900- 922                      0.147
                          948- 1018                     0.853
Median Probability:   982

04
38643
charcoal
Radiocarbon Age BP    730 +/-   20
Calibration data set: intcal13.14c              # Reimer et al. 2013
% area enclosed       cal AD age ranges           relative area under
                                                probability distribution
68.3 (1 sigma)     cal AD 1269- 1282                    1.000
95.4 (2 sigma)     cal AD 1261- 1288                    1.000
Median Probability:  1274

05
38644
charcoal
Radiocarbon Age BP   1080 +/-   20
Calibration data set: intcal13.14c              # Reimer et al. 2013
% area enclosed       cal AD age ranges           relative area under
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                                                  probability distribution
68.3 (1 sigma)     cal AD 902- 920                          0.281
                          962- 994                          0.719
95.4 (2 sigma)     cal AD 897- 925                          0.251
                          943- 1015                         0.749
Median Probability:   971

06
38645
charcoal
Radiocarbon Age BP   1040 +/-   20
Calibration data set: intcal13.14c              # Reimer et al. 2013
% area enclosed       cal AD age ranges           relative area under
                                                  probability distribution
68.3 (1 sigma)     cal AD 993- 1017                         1.000
95.4 (2 sigma)     cal AD 978- 1023                         1.000
Median Probability:  1002

07
38646
charcoal
Radiocarbon Age BP   1210 +/-   20
Calibration data set: intcal13.14c              # Reimer et al. 2013
% area enclosed       cal AD age ranges           relative area under
                                                  probability distribution
68.3 (1 sigma)     cal AD 772- 779                          0.098
                          789- 830                          0.523
                          837- 867                          0.380
95.4 (2 sigma)     cal AD 726- 737                          0.038
                          768- 885                          0.962
Median Probability:   820

08
38647
collagen
Radiocarbon Age BP    920 +/-   20
Calibration data set: intcal13.14c              # Reimer et al. 2013
% area enclosed       cal AD age ranges           relative area under
                                                  probability distribution
68.3 (1 sigma)     cal AD 1046- 1092                        0.628
                          1121- 1140                        0.255
                          1147- 1156                        0.118
95.4 (2 sigma)     cal AD 1038- 1161                        1.000
Median Probability:  1094

09
38648
nut
Radiocarbon Age BP    960 +/-   20
Calibration data set: intcal13.14c              # Reimer et al. 2013
% area enclosed       cal AD age ranges           relative area under
                                                  probability distribution
68.3 (1 sigma)     cal AD 1026- 1046                        0.378
                          1092- 1121                        0.502
                          1140- 1147                        0.119
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95.4 (2 sigma)     cal AD 1021- 1054                    0.339
                          1077- 1153                    0.661
Median Probability:  1096

10
38649
charcoal
Radiocarbon Age BP   1230 +/-   20
Calibration data set: intcal13.14c              # Reimer et al. 2013
% area enclosed       cal AD age ranges           relative area under
                                                probability distribution
68.3 (1 sigma)     cal AD 716- 743                    0.369
                          766- 778                    0.187
                          791- 805                    0.140
                          812- 826                    0.108
                          840- 862                    0.196
95.4 (2 sigma)     cal AD 693- 747                    0.353
                          763- 781                    0.157
                          787- 878                    0.490
Median Probability:   776

11
38650
nut
Radiocarbon Age BP    940 +/-   20
Calibration data set: intcal13.14c              # Reimer et al. 2013
% area enclosed       cal AD age ranges           relative area under
                                                probability distribution
68.3 (1 sigma)     cal AD 1036- 1050                  0.184
                          1082- 1127                  0.610
                          1135- 1151                  0.206
95.4 (2 sigma)     cal AD 1031- 1059                  0.223
                          1063- 1154                  0.777
Median Probability:  1098

12
38651
nut
Radiocarbon Age BP    880 +/-   20
Calibration data set: intcal13.14c              # Reimer et al. 2013
% area enclosed       cal AD age ranges           relative area under
                                                probability distribution
68.3 (1 sigma)     cal AD 1155- 1209                  1.000
95.4 (2 sigma)     cal AD 1049- 1084                  0.192
                          1124- 1136                  0.035
                          1150- 1217                  0.773
Median Probability:  1169

13
38652
nut
Radiocarbon Age BP    890 +/-   20
Calibration data set: intcal13.14c              # Reimer et al. 2013
% area enclosed       cal AD age ranges           relative area under
                                                probability distribution
68.3 (1 sigma)     cal AD 1052- 1081                  0.397
                          1152- 1189                  0.585
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		1199- 1202	0.018
95.4 (2 sigma)	cal AD	1045- 1093	0.352
		1120- 1140	0.091
		1147- 1213	0.557

Median Probability: 1153

References for calibration datasets:
Reimer PJ, Bard E, Bayliss A, Beck JW, Blackwell PG, Bronk Ramsey C, Buck CE Cheng H, Edwards RL, Friedrich M, Grootes PM, Guilderson TP, Haflidason H, Hajdas I, Hatté C, Heaton TJ, Hogg AG, Hughen KA, Kaiser KF, Kromer B, Manning SW, Niu M, Reimer RW, Richards DA, Scott EM, Southon JR, Turney CSM, van der Plicht J.
IntCal13 and MARINE13 radiocarbon age calibration curves 0-50000 years calBP
Radiocarbon 55(4). DOI: 10.2458/azu_js_rc.55.16947
Comments:
* This standard deviation (error) includes a lab error multiplier.
** 1 sigma = square root of (sample std. dev.^2 + curve std. dev.^2)
** 2 sigma = 2 x square root of (sample std. dev.^2 + curve std. dev.^2)
where ^2 = quantity squared.
[ ] = calibrated range impinges on end of calibration data set
0* represents a "negative" age BP
1955* or 1960* denote influence of nuclear testing C-14
NOTE: Cal ages and ranges are rounded to the nearest year which may be too precise in many instances. Users are advised to round results to the nearest 10 yr for samples with standard deviation in the radiocarbon age greater than 50 yr.

Appendix C. Regression Formulae Used.				
Taxon	***N***	**Slope (*b*)**	**Y-Intercept (log *a*)**	**r^2**
Specimen Weight (g) to Meat Weight (g)				
Bivalvia (bivalves)	80	0.68	0.018	0.83
Geukensia demissa (ribbed mussel)	100	0.80	-0.22	0.86
Crassostrea virginica (eastern oyster)	100	0.97	-0.77	0.97
Tagelus plebeius (stout tagelus)	46	0.99	0.29	0.95
Mercenaria mercenaria (northern quahog)	40	0.94	-0.50	0.95
Gastropoda (gastropods)	135	0.92	-0.16	0.89
Littorina irrorata (marsh periwinkle)	62	0.94	-0.34	0.97
Nassarius obsoletus (eastern mudsnail)	50	1.06	-0.44	0.93
Specimen Weight (kg) to Meat Weight (kg)				
Chondrichthyes (cartilaginous fishes)	17	0.86	1.68	0.85
Actinopterygii (ray-finned fishes)	393	0.81	0.90	0.80
Non-Perciformes (non perch-like fishes)	119	0.79	0.85	0.88
Siluriformes (catfishes)	36	0.95	1.15	0.87
Perciformes (perch-like fishes)	274	0.83	0.93	0.76
Sparidae (porgies)	22	0.92	0.96	0.98
Sciaenidae (drums and croakers)	99	0.74	0.81	0.73
Pleuronectiformes (flounders, soles and tonguefishes)	21	0.89	1.09	0.95
Testudines (turtles)	26	0.67	0.51	0.55
Aves (birds)	307	0.91	1.04	0.97
Mammalia (mammals)	97	0.90	1.12	0.94

Note: $Y=ax^b$ where Y is biomass or meat weight; x is specimen weight; a is the Y-intercept; and b is the slope. N is the number of observations (Reitz and Cordier 1983; Quitmyer 1985; Reitz and Quitmyer 1988; Reitz et al. 1987; Reitz and Wing 2008:68, 233-242).

Appendix D. Specimens Identified: Taylor Fish Camp (9GN12) 2018 Donor Board-2, Midden Deposit (FS 05/Feature 01).

CAT# 18A-	Taxon	Screen Size (in)	NISP	Element	Portion	Side	Modifications	Remarks
005-0088	Actinopterygii	1/16	1	anal/pelvic spine	proximal & shaft		burned	
005-0088	Actinopterygii	1/16	12	anal/pelvic spine	proximal & shaft			many are probably Sciaenidae but cannot be certain
005-0088	Actinopterygii	1/16	2	articular	posterior			
005-0088	Actinopterygii	1/16	4	ceratohyal	anterior & central			
005-0088	Actinopterygii	1/16	15	dorsal spine	proximal/frag.			many are probably Sciaenidae but cannot be certain
005-0088	Actinopterygii	1/16	2	dorsal spine	mostly whole		burned	
005-0088	Actinopterygii	1/16	1	exooccipital	mostly whole			
005-0088	Actinopterygii	1/16	6	fin ray	frag.			
005-0088	Actinopterygii	1/16	2	haemal/neural spine	frag.			
005-0088	Actinopterygii	1/16	422	indet. frag.				
005-0088	Actinopterygii	1/16	55	indet. frag.			burned	
005-0088	Actinopterygii	1/16	684	indet. spine/ray	frag.			may include rib and pterygiophore frags
005-0088	Actinopterygii	1/16	18	indet. spine/ray	frag.		burned	may include rib and pterygiophore frags
005-0088	Actinopterygii	1/16	12	indet. tooth-bearing element	frag.			one specimen includes a tooth
005-0088	Actinopterygii	1/16	1	molariform tooth	crown			*P. cromis* or Sparidae
005-0088	Actinopterygii	1/16	2	premaxilla	anterior frag.	right		probably Sciaenidae but cannot be certain
005-0088	Actinopterygii	1/16	8	pterygiophore	frag.			
005-0088	Actinopterygii	1/16	13	pterygiophore	distal			2 pieces cross-mend, new break
005-0088	Actinopterygii	1/16	1	quadrate	articular process			
005-0088	Actinopterygii	1/16	9	scale	frag.			
005-0088	Actinopterygii	1/16	9	ultimate vertebra	anterior			
005-0088	Actinopterygii	1/16	1	vertebra	mostly whole		calcined	
005-0088	Actinopterygii	1/16	258	vertebra	mostly whole			many are likely Sciaenidae but cannot be certain
005-0088	Actinopterygii	1/16	13	vertebra	centrum frag.		burned	
005-0088	Actinopterygii	1/16	8	vertebra	mostly whole		burned	one is encased in burned shell/concretion material
005-0088	Actinopterygii	1/16	146	vertebra	centrum frag.			
005-0023	Actinopterygii	1/4	8	indet. frag.				2 pieces cross-mend, new break
005-0023	Actinopterygii	1/4	3	vertebra	centrum frag.			
005-0063	Actinopterygii	1/8	1	atlas	mostly whole			likely Sciaenidae (especially *M. undulatus)* but could not rule out other families
005-0063	Actinopterygii	1/8	35	caudal vertebra	centrum frag.			many are probably Sciaenidae but cannot be certain
005-0063	Actinopterygii	1/8	1	dentary				
005-0063	Actinopterygii	1/8	362	indet. frag.				
005-0063	Actinopterygii	1/8	43	indet. spine/ray	frag.			may include rib and pterygiophore frags
005-0063	Actinopterygii	1/8	6	indet. tooth bearing element	frag.			
005-0063	Actinopterygii	1/8	3	neural/haemal spine	frag.			
005-0063	Actinopterygii	1/8	1	operculum				
005-0063	Actinopterygii	1/8	1	pectoral/pelvic spine	proximal			
005-0063	Actinopterygii	1/8	10	precaudal vertebra	centrum frag.			
005-0063	Actinopterygii	1/8	2	pterygiophore	shaft			
005-0063	Actinopterygii	1/8	9	scale				2 pieces cross-mend, new break
005-0063	Actinopterygii	1/8	2	tooth (pointed)	mostly whole			one tooth is fairly large (probably *Cynoscion* sp. or Paralichthyidae)
005-0063	Actinopterygii	1/8	54	vertebra	centrum frag.			
005-0063	Actinopterygii	1/8	2	vertebra	centrum/spine frag.			
005-0068	Actinopterygii	1/8	13	indet. frag.			burned	
005-0068	Actinopterygii	1/8	2	indet. spine frag.			burned	
005-0068	Actinopterygii	1/8	4	vertebra	centrum frag.		burned	2 pieces cross-mend, new break
005-0072	Actinopterygii	1/8	2	indet. frag.			calcined	
005-0079	Anura	1/8	1	illium	acetabulum	left		similar to Bufonidae but cannot rule out Ranidae
005-0090	Ariidae	1/16	1	coracoid	frag.			*A. felis* or *B. marinus*
005-0090	Ariidae	1/16	1	coracoid	articular process	right		*A. felis* or *B. marinus*
005-0090	Ariidae	1/16	1	dentary	anterior frag.	right		*A. felis* or *B. marinus*
005-0090	Ariidae	1/16	2	pterygiophore 2	articular process			*A. felis* or *B. marinus*
005-0090	Ariidae	1/16	8	spine	frag.			*A. felis* or *B. marinus*
005-0090	Ariidae	1/16	2	spine	frag.		burned	*A. felis* or *B. marinus*
005-0019	Ariidae	1/4	12	caudal vertebra	centrum			*A. felis* or *B. marinus*
005-0019	Ariidae	1/4	1	coracoid	frag.			*A. felis* or *B. marinus*
005-0019	Ariidae	1/4	1	otolith (lapillus)	whole	left		*A. felis* or *B. marinus*
005-0019	Ariidae	1/4	2	otolith (lapillus)	whole	right		*A. felis* or *B. marinus*
005-0019	Ariidae	1/4	1	precaudal vertebra	centrum			*A. felis* or *B. marinus*
005-0019	Ariidae	1/4	2	weberian apparatus	centrum			*A. felis* or *B. marinus.* 2 pieces cross-mend, new break
005-0022	Ariidae	1/4	1	precaudal vertebra	centrum?		calcined	*A. felis* or *B. marinus*
005-0053	Ariidae	1/8	1	branchiostegal ray	frag.		burned	*A. felis* or *B. marinus*
005-0053	Ariidae	1/8	1	ceratohyal	central		burned	*A. felis* or *B. marinus*
005-0053	Ariidae	1/8	2	neurocranium frag.			burned	*A. felis* or *B. marinus*
005-0053	Ariidae	1/8	1	otolith (lapillus)	whole	left	burned	*A. felis* or *B. marinus*
005-0061	Ariidae	1/8	1	articular	articular process	left		*A. felis* or *B. marinus*
005-0061	Ariidae	1/8	1	articular	posterior	right		*A. felis* or *B. marinus*
005-0061	Ariidae	1/8	10	caudal vertebra	centrum			*A. felis* or *B. marinus*
005-0061	Ariidae	1/8	1	ceratohyal	central frag.	right		*A. felis* or *B. marinus*
005-0061	Ariidae	1/8	1	cleithrum	central frag.	right		*A. felis* or *B. marinus*
005-0061	Ariidae	1/8	1	cleithrum	frag.			*A. felis* or *B. marinus*
005-0061	Ariidae	1/8	4	coracoid	frag.			*A. felis* or *B. marinus*
005-0061	Ariidae	1/8	1	coracoid	articular process	left		*A. felis* or *B. marinus*

Appendix D. Specimens Identified: Taylor Fish Camp (9GN12) 2018 Donor Board-2, Midden Deposit (FS 05/Feature 01).

CAT# 18A-	Taxon	Screen Size (in)	NISP	Element	Portion	Side	Modifications	Remarks
005-0061	Ariidae	1/8	1	dentary	frag.			*A. felis* or *B. marinus*
005-0061	Ariidae	1/8	4	indet. neurocranium frag.				*A. felis* or *B. marinus*
005-0061	Ariidae	1/8	2	pectoral/dorsal spine	shaft			*A. felis* or *B. marinus*
005-0061	Ariidae	1/8	7	precaudal vertebra	centrum			*A. felis* or *B. marinus*
005-0061	Ariidae	1/8	1	pterygiophore	articular process			*A. felis* or *B. marinus*
005-0061	Ariidae	1/8	2	pterygiophore 1	anterior			*A. felis* or *B. marinus*. 2 pieces cross-mend, new break
005-0061	Ariidae	1/8	1	quadrate	articular process			*A. felis* or *B. marinus*
005-0061	Ariidae	1/8	1	ultimate vertebra	frag.			*A. felis* or *B. marinus*
005-0061	Ariidae	1/8	1	vertebra	centrum frag.			*A. felis* or *B. marinus*
005-0067	Ariidae	1/8	1	dorsal/pectoral spine	frag.		calcined	*A. felis* or *B. marinus*
005-0067	Ariidae	1/8	1	indet. frag.	articular process		calcined	*A. felis* or *B. marinus*
005-0084	*Ariopsis felis*	1/16	2	neurocranium frag.			burned	
005-0084	*Ariopsis felis*	1/16	1	neurocranium frag.				
005-0015	*Ariopsis felis*	1/4	1	dorsal spine	proximal & shaft			
005-0015	*Ariopsis felis*	1/4	1	indet. neurocranium frag.				
005-0015	*Ariopsis felis*	1/4	1	operculum	anterior, articular process	right		
005-0026	*Ariopsis felis*	1/4	1	indet. neurocranium frag.			burned	
005-0058	*Ariopsis felis*	1/8	2	indet. neurocranium frag.				
005-0058	*Ariopsis felis*	1/8	1	pterygiophore 1	frag.			
005-0058	*Ariopsis felis*	1/8	2	spine	shaft			
005-0059	*Ariopsis felis*	1/8	5	indet. neurocranium frag.			burned	
005-0059	*Ariopsis felis*	1/8	1	spine	shaft		burned	
005-0074	*Ariopsis felis*	1/8	1	indet. neurocranium frag.			calcined	
005-0080	Aves	1/8	1	tibiotarsus	proximal			similar to Anatidae but cannot be certain
005-0014	*Bagre marinus*	1/4	1	cleithrum	central frag.	left		
005-0014	*Bagre marinus*	1/4	2	coracoid	frag.	left		2 pieces cross-mend, new break
005-0014	*Bagre marinus*	1/4	1	coracoid	articular process	right		
005-0014	*Bagre marinus*	1/4	1	dorsal spine	proximal & shaft			MNI=2 (including 1/8-in dorsal spine)
005-0014	*Bagre marinus*	1/4	8	indet. neurocranium frag.				
005-0014	*Bagre marinus*	1/4	1	prootic	posterior & central			
005-0014	*Bagre marinus*	1/4	1	weberian apparatus	anterior			
005-0056	*Bagre marinus*	1/8	1	cleithrum	anterior dorsal process	left		
005-0056	*Bagre marinus*	1/8	1	coracoid	articular process	left		
005-0056	*Bagre marinus*	1/8	1	dentary	anterior	right		
005-0056	*Bagre marinus*	1/8	2	dorsal pterygiophore 1	articular process			
005-0056	*Bagre marinus*	1/8	1	dorsal spine	proximal & shaft			
005-0056	*Bagre marinus*	1/8	1	hyomandibular	articular process	left		
005-0056	*Bagre marinus*	1/8	13	indet. neurocranium frag.				
005-0056	*Bagre marinus*	1/8	1	pectoral spine	proximal	right		
005-0056	*Bagre marinus*	1/8	2	posttemporosupracleithrum	central	left		
005-0056	*Bagre marinus*	1/8	1	posttemporosupracleithrum	central	right		
005-0056	*Bagre marinus*	1/8	1	pterygiophore	proximal			
005-0056	*Bagre marinus*	1/8	1	quadrate	articular process	left		
005-0056	*Bagre marinus*	1/8	1	quadrate	articular process	right		
005-0056	*Bagre marinus*	1/8	2	spine	shaft			
005-0056	*Bagre marinus*	1/8	1	weberian apparatus	frag.			
005-0057	*Bagre marinus*	1/8	2	spine	shaft		calcined	
005-0060	*Bagre marinus*	1/8	3	neurocranium frag.			burned	
005-0097	*Bairdiella chrysoura*	1/16	1	atlas	mostly whole			
005-0097	*Bairdiella chrysoura*	1/16	1	operculum	articular process/frag			
005-0097	*Bairdiella chrysoura*	1/16	2	precaudal vertebra	mostly whole			
005-0052	*Bairdiella chrysoura*	1/8	2	otolith (lapillus)	whole	right		MNI=2
005-0052	*Bairdiella chrysoura*	1/8	1	otolith (sagitta)	mostly whole	left		
005-0040	*Boonea impressa*	1/16	86	shell	mostly whole			MNI=86
005-0039	*Boonea impressa*	1/8	2	shell	mostly whole			MNI=2
005-0092	Brachyura	1/16	1	cheliped	dactyl/propal finger, distal tip			
005-0044	Brachyura	1/8	3	cheliped teeth	mostly whole			one is from a large individual, probably *Callinectes sapida*
005-0011	burned shell/concretion	1/16		indet. frag.			burned, calcined	
005-0008	burned shell/concretion	1/4	1	indet. shell frag.			burned, calcined	
005-0004	burned shell/concretion	1/8	224	indet. shell frag.			burned, calcined	
005-0025	cf. *Archosargus probatocephalus*	1/4	1	atlas	mostly whole			could rule out *Lagodon rhomboides* based on size but need to compare with other Sparidae
005-0025	cf. *Archosargus probatocephalus*	1/4	3	caudal vertebra	mostly whole			
005-0087	cf. *Mugil* sp.	1/16	14	basioccipital	posterior			MNI=15 (including calcined basioccipital). Small individuals
005-0087	cf. *Mugil* sp.	1/16	1	basioccipital	posterior		calcined	
005-0087	cf. *Mugil* sp.	1/16	13	dorsal spine	proximal & shaft			
005-0087	cf. *Mugil* sp.	1/16	1	dorsal spine	proximal		burned	
005-0087	cf. *Mugil* sp.	1/16	1	indet. element	mostly whole			possibly a suborbital
005-0087	cf. *Mugil* sp.	1/16	1	otolith (sagitta)	whole	right		
005-0087	cf. *Mugil* sp.	1/16	14		distal			
005-0087	cf. *Mugil* sp.	1/16	1	ultimate vertebra	dorsal			
005-0087	cf. *Mugil* sp.	1/16	7	ultimate vertebra	anterior			
005-0087	cf. *Mugil* sp.	1/16	1	vertebra	centrum frag.			
005-0087	cf. *Mugil* sp.	1/16	39	vertebra	mostly whole			

Appendix D. Specimens Identified: Taylor Fish Camp (9GN12) 2018 Donor Board-2, Midden Deposits (FS 05/Feature 01).

CAT# 18A-	Taxon	Screen Size (in)	NISP	Element	Portion	Side	Modifications	Remarks
005-0065	cf. *Mugil* sp.	1/8	1	atlas	mostly whole			
005-0065	cf. *Mugil* sp.	1/8	4	caudal vertebra	centrum			
005-0065	cf. *Mugil* sp.	1/8	1	dorsal spine	proximal & shaft			
005-0065	cf. *Mugil* sp.	1/8	1	hyomandibular	articular processes	right		
005-0065	cf. *Mugil* sp.	1/8	2	operculum	anterior			2 pieces cross-mend, new break
005-0065	cf. *Mugil* sp.	1/8	1	operculum	articular process	right		
005-0065	cf. *Mugil* sp.	1/8	1	pectoral spine	proximal & shaft			
005-0065	cf. *Mugil* sp.	1/8	5	precaudal vertebra	centrum			
005-0065	cf. *Mugil* sp.	1/8	2	pterygiophore	articular process			
005-0065	cf. *Mugil* sp.	1/8	1	ultimate vertebra	anterior			
005-0065	cf. *Mugil* sp.	1/8	4	vertebra	centrum frag.			
005-0071	cf. *Mugil* sp.	1/8	1	dorsal spine	proximal & shaft		burned	
005-0093	cf. *Sciaenops ocellatus*	1/16	6	pharyngeal tooth	mostly whole			ID based mostly on size
005-0093	cf. *Sciaenops ocellatus*	1/16	1	pterygiophore	mostly whole			similar to other drums but best match for *S. ocellatus*
005-0043	Cirripedia	1/16	32	plate	frag./mostly whole			identification not attempted beyond class; MNI=9 (including 1/4- and 1/8-in specimens)
005-0006	Cirripedia	1/4	1	plate	mostly whole			identification not attempted beyond class
005-0037	Cirripedia	1/8	41	plate	frag./mostly whole			identification not attempted beyond class
005-0076	Clupeidae	1/16	3	ultimate vertebra	anterior & central			MNI=3
005-0076	Clupeidae	1/16	35	vertebra	mostly whole			
005-0076	Clupeidae	1/16	1	vertebra	mostly whole		calcined	
005-0012	*Crassostrea virginica*	1/4	83	hinge	frag./mostly whole	left		
005-0012	*Crassostrea virginica*	1/4	123	hinge	frag./mostly whole	right		MNI=123
005-0012	*Crassostrea virginica*	1/4	293	indet. shell frag.				a few are mostly whole
005-0016	*Crassostrea virginica*	1/8	9	hinge	frag.	left		
005-0016	*Crassostrea virginica*	1/8	129	indet. shell frag.				
005-0082	*Cynoscion* sp.	1/16	2	caudal vertebra	mostly whole			
005-0082	*Cynoscion* sp.	1/16	1	vertebra	centrum frag.			
005-0054	*Cynoscion* sp.	1/8	11	caudal vertebra	centrum			
005-0054	*Cynoscion* sp.	1/8	1	otolith (sagitta)	whole	left		
005-0054	*Cynoscion* sp.	1/8	1	otolith (sagitta)	whole	right		
005-0054	*Cynoscion* sp.	1/8	1	precaudal vertebra	centrum			
005-0054	*Cynoscion* sp.	1/8	5	vertebra	centrum frag.			
005-0046	Emydidae	1/4	3	costal frag.	central			
005-0046	Emydidae	1/4	6	indet. carapace/plastron frag.				
005-0050	Emydidae	1/8	1	vertebra	frag.			
005-0083	Fundulidae	1/16	4	articular	mostly whole/posterior	left		
005-0083	Fundulidae	1/16	8	articular	mostly whole	right		likely *Fundulus* sp. but need to compare with *Luciana* sp.
005-0083	Fundulidae	1/16	11	atlas	mostly whole			likely *Fundulus* sp. but need to compare with *Luciana* sp. MNI=11
005-0083	Fundulidae	1/16	9	basioccipital	mostly whole			likely *Fundulus* sp. but need to compare with *Luciana* sp.
005-0083	Fundulidae	1/16	1	ceratohyal	anterior & central		burned	likely *Fundulus* sp. but need to compare with *Luciana* sp.
005-0083	Fundulidae	1/16	12	ceratohyal	anterior & central			likely *Fundulus* sp. but need to compare with *Luciana* sp.
005-0083	Fundulidae	1/16	1	dentary	mostly whole	right		likely *Fundulus* sp. but need to compare with *Luciana* sp.
005-0083	Fundulidae	1/16	1	hyomandibular	frag.			likely *Fundulus* sp. but need to compare with *Luciana* sp.
005-0083	Fundulidae	1/16	2	hyomandibular	articular process/frag.	left		likely *Fundulus* sp. but need to compare with *Luciana* sp.
005-0083	Fundulidae	1/16	3	hyomandibular	articular process/frag.	right		likely *Fundulus* sp. but need to compare with *Luciana* sp.
005-0083	Fundulidae	1/16	1	indet. skull element				likely *Fundulus* sp. but need to compare with *Luciana* sp.
005-0083	Fundulidae	1/16	4	indet. skull element	mostly whole			likely *Fundulus* sp. but need to compare with *Luciana* sp.
005-0083	Fundulidae	1/16	6	lower pharyngeal plate	mostly whole	left		likely *Fundulus* sp. but need to compare with *Luciana* sp.
005-0083	Fundulidae	1/16	7	lower pharyngeal plate	mostly whole	right		likely *Fundulus* sp. but need to compare with *Luciana* sp.
005-0083	Fundulidae	1/16	6	operculum	articulation process			likely *Fundulus* sp. but need to compare with *Luciana* sp.
005-0083	Fundulidae	1/16	2	premaxilla	anterior frag.	left		likely *Fundulus* sp. but need to compare with *Luciana* sp.
005-0083	Fundulidae	1/16	5	premaxilla	mostly whole	right		likely *Fundulus* sp. but need to compare with *Luciana* sp.
005-0083	Fundulidae	1/16	1	prevomer	mostly whole			likely *Fundulus* sp. but need to compare with *Luciana* sp.
005-0083	Fundulidae	1/16	5	quadrate	mostly whole			likely *Fundulus* sp. but need to compare with *Luciana* sp.
005-0083	Fundulidae	1/16	1	upper pharyngeal plate	mostly whole			likely *Fundulus* sp. but need to compare with *Luciana* sp.
005-0083	Fundulidae	1/16	1	vertebra	centrum		burned	likely *Fundulus* sp. but need to compare with *Luciana* sp.
005-0083	Fundulidae	1/16	147	vertebra	centrum			likely *Fundulus* sp. but need to compare with *Luciana* sp.
005-0077	Fundulidae	1/8	1	articular	mostly whole	right		likely *Fundulus* sp. but need to compare with *Luciana* sp.
005-0077	Fundulidae	1/8	2	basioccipital	mostly whole			likely *Fundulus* sp. but need to compare with *Luciana* sp.
005-0077	Fundulidae	1/8	2	dentary	anterior	left		likely *Fundulus* sp. but need to compare with *Luciana* sp. Cross-mend, new break
005-0077	Fundulidae	1/8	2	operculum	articular process	right		likely *Fundulus* sp. but need to compare with *Luciana* sp.
005-0077	Fundulidae	1/8	2	precaudal vertebra	mostly whole			likely *Fundulus* sp. but need to compare with *Luciana* sp.
005-0042	Gastropoda	1/16	38	indet. shell frag.	frag./mostly whole			Identification not attempted beyond class. Small individuals. MNI=25
005-0038	Gastropoda	1/8	11	indet. shell frag.	frag./mostly whole			Identification not attempted beyond class. Small individuals. MNI=6
005-0028	*Geukensia demissa*	1/4	22	hinge	frag.	left		MNI=22
005-0028	*Geukensia demissa*	1/4	16	hinge	frag.	right		
005-0028	*Geukensia demissa*	1/4	1334	indet. shell frag.				
005-0034	*Geukensia demissa*	1/8	5	hinge	frag.	right		
005-0034	*Geukensia demissa*	1/8	8	hinge	frag.	left		MNI=8
005-0034	*Geukensia demissa*	1/8	11620	indet. shell frag.				
005-0081	*Leiostomus xanthurus*	1/16	1	otolith (sagitta)	whole	left		
005-0064	*Leiostomus xanthurus*	1/8	1	atlas	mostly whole			
005-0064	*Leiostomus xanthurus*	1/8	1	lower pharyngeal plate	posterior	right		

Appendix D. Specimens Identified: Taylor Fish Camp (9GN12) 2018 Donor Board-2, Midden Deposit (FS 05/Feature 01).								
CAT# 18A-	**Taxon**	**Screen Size (in)**	**NISP**	**Element**	**Portion**	**Side**	**Modifications**	**Remarks**
005-0064	*Leiostomus xanthurus*	1/8	1	lower pharyngeal plate	posterior	left		
005-0002	*Littorina irrorata*	1/4	1	shell	mostly whole			MNI=2 (including 1/8-in specimen)
005-0009	*Littorina irrorata*	1/8	1	shell	mostly whole			
005-0027	*Malaclemys terrapin*	1/4	1	costal 5	distal	right		
005-0027	*Malaclemys terrapin*	1/4	1	dentary	central frag.	right		
005-0027	*Malaclemys terrapin*	1/4	1	dentary	central frag.	left		
005-0027	*Malaclemys terrapin*	1/4	1	entoplastron	mostly whole	left		
005-0027	*Malaclemys terrapin*	1/4	1	indet. carapace/plastron frag.	frag.			
005-0027	*Malaclemys terrapin*	1/4	1	peripheral 10	mostly whole	right		
005-0027	*Malaclemys terrapin*	1/4	1	peripheral 10	mostly whole	left		
005-0027	*Malaclemys terrapin*	1/4	1	peripheral 11	mostly whole	right		
005-0027	*Malaclemys terrapin*	1/4	1	peripheral 4	mostly whole	right		
005-0027	*Malaclemys terrapin*	1/4	1	peripheral 5	mostly whole	right		
005-0027	*Malaclemys terrapin*	1/4	1	peripheral 7	mostly whole	right		could be left peripheral 3
005-0027	*Malaclemys terrapin*	1/4	1	peripheral 9	mostly whole	right		
005-0027	*Malaclemys terrapin*	1/4	1	quadrate	articular process, frag.	right		
005-0027	*Malaclemys terrapin*	1/4	1	quadrate	articular process, frag.	left		
005-0027	*Malaclemys terrapin*	1/4	1	tibia	proximal & shaft	left		
005-0032	cf. *Malaclemys terrapin*	1/4	1	basioccipital	mostly whole			compare with a larger *Terrapene* sp.
005-0032	cf. *Malaclemys terrapin*	1/4	1	entoplastron	frag.			
005-0032	cf. *Malaclemys terrapin*	1/4	1	indet. plastron	frag.			
005-0049	cf. *Malaclemys terrapin*	1/8	1	pelvic girdle element	mostly whole			compare with larger *Trachemys* sp. or *Pseudemys* sp.
005-0017	*Mercenaria mercenaria*	1/4	5	hinge	frag.	left		
005-0017	*Mercenaria mercenaria*	1/4	8	hinge	frag.	right		MNI=8
005-0017	*Mercenaria mercenaria*	1/4	87	indet. shell frag.				
005-0020	*Mercenaria mercenaria*	1/8	46	indet. shell frag.				
005-0051	*Micropogonias undulatus*	1/8	1	otolith (sagitta)	whole	left		
005-0051	*Micropogonias undulatus*	1/8	1	otolith (sagitta)	whole	right		MNI=2 (based on size, compared to 1/8-in specimen)
005-0070	*Micropogonias undulatus*	1/8	1	dorsal spine	proximal & shaft		burned	
005-0094	cf. *Micropogonias undulatus*	1/16	1	pterygiophore	distal			compare with a complete *Leiostomus xanthurus*
005-0035	Mollusca	1/16		indet. shell frag.				
005-0029	Mollusca	1/4	532	indet. shell frag.				
005-0030	Mollusca	1/8	6803	indet. shell frag.				
005-0095	Myliobatiformes	1/16	1	grinding plate	frag.			probably Dasyatidae but cannot rule out Rajidae
005-0095	Myliobatiformes	1/16	1	tooth	mostly whole			probably Dasyatidae but cannot rule out Rajidae
005-0095	Myliobatiformes	1/16	1	vertebra				probably Dasyatidae but cannot rule out Rajidae
005-0095	Myliobatiformes	1/16	1	vertebra			calcined	MNI=2 (based on size, compared to the non-calcined vertebra)
005-0003	*Nassarius obsoletus*	1/4	7	shell	mostly whole			MNI=7
005-0018	Pleuronectiformes	1/4	3	caudal vertebra	mostly whole			probably Paralichthyidae but cannot rule out Bothidae. MNI=2 (based on size)
005-0062	Pleuronectiformes	1/8	7	caudal vertebra	centrum			probably Paralichthyidae but cannot rule out Bothidae. MNI=2 (based on size)
005-0062	Pleuronectiformes	1/8	1	haemal/neural spine	frag.			probably Paralichthyidae but cannot rule out Bothidae
005-0062	Pleuronectiformes	1/8	1	precaudal vertebra	centrum			probably Paralichthyidae but cannot rule out Bothidae
005-0086	*Pogonias cromis*	1/16	2	molariform tooth	mostly whole			
005-0086	*Pogonias cromis*	1/16	3	molariform tooth	crown			
005-0024	*Pogonias cromis*	1/4	1	pharyngeal plate	frag.			includes a pahryngeal tooth
005-0089	Sciaenidae	1/16	34	dorsal spine	proximal & shaft			most are probably *S. lanceolatus, B. chrysoura,* or *M. undulatus*
005-0089	Sciaenidae	1/16	4	pelvic/anal spine	proximal & shaft			
005-0089	Sciaenidae	1/16	1	pharyngeal plate	mostly whole			closest to *M. undulatus* but cannot rule out other drums (especially . *S. ocellatus*)
005-0089	Sciaenidae	1/16	4	pharyngeal plate	frag.			
005-0089	Sciaenidae	1/16	4	pterygiophore	distal		hyperostosis	closest to *M. undulatus* but cannot rule out other drums
005-0055	Sciaenidae	1/8	1	anterior ceratohyal	mostly whole	left		
005-0055	Sciaenidae	1/8	1	anterior ceratohyal	mostly whole	right		
005-0055	Sciaenidae	1/8	1	articular	posterior	right		
005-0055	Sciaenidae	1/8	1	atlas	frag.			
005-0055	Sciaenidae	1/8	1	basioccipital	mostly whole			closest to *L. xanthurus* or *M. undulatus* but cannot rule out other drums
005-0055	Sciaenidae	1/8	42	caudal vertebra	centrum			
005-0055	Sciaenidae	1/8	12	precaudal vertebra	centrum			
005-0055	Sciaenidae	1/8	1	premaxilla	anterior	left		
005-0055	Sciaenidae	1/8	2	pterygiophore	articular process			
005-0055	Sciaenidae	1/8	1	ultimate vertebra	anterior			
005-0055	Sciaenidae	1/8	2	vertebra	centrum, spine frag.			
005-0066	Sparidae	1/8	2	caudal vertebra	centrum			probably *A. probatocephalus*
005-0066	Sparidae	1/8	1	pectoral spine	proximal & shaft	right		
005-0066	Sparidae	1/8	1	pectoral spine	proximal & shaft	left		
005-0085	*Stellifer lanceolatus*	1/16	1	articular	mostly whole	right		
005-0085	*Stellifer lanceolatus*	1/16	1	precaudal vertebra	mostly whole			
005-0069	*Stellifer lanceolatus*	1/8	1	dorsal spine	proximal & shaft			
005-0041	Stylommatophora	1/16	160	shell	frag./mostly whole			Identification beyond order not attempted. MNI=81
005-0005	Stylommatophora	1/4	1	shell	mostly whole			Identification beyond order not attempted.
005-0036	Stylommatophora	1/8	35	shell	frag./mostly whole			Identification beyond order not attempted. MNI= 22
005-0021	*Tagelus plebius*	1/4	33	hinge	frag.	left		MNI=38 (inclulding 1/8-in left hinges)
005-0021	*Tagelus plebius*	1/4	24	hinge	frag.	right		
005-0021	*Tagelus plebius*	1/4	578	indet. shell frag.				

Appendix D. Specimens Identified: Taylor Fish Camp (9GN12) 2018 Donor Board-2, Midden Deposit (FS 05/Feature 01).								
CAT# 18A-	**Taxon**	**Screen Size (in)**	**NISP**	**Element**	**Portion**	**Side**	**Modifications**	**Remarks**
005-0033	*Tagelus plebius*	1/8	5	hinge	frag.	left		
005-0033	*Tagelus plebius*	1/8	4	hinge	frag.	right		
005-0033	*Tagelus plebius*	1/8	1771	indet. shell frag.				
005-0031	Testudines	1/4	1	humerus	proximal	right		
005-0031	Testudines	1/4	1	humerus	proximal & shaft	left		
005-0031	Testudines	1/4	8	indet. carapace/plastron frag.				
005-0031	Testudines	1/4	1	limb bone	shaft			
005-0031	Testudines	1/4	1	neural	frag.			
005-0045	Testudines	1/4	3	indet. carapace/plastron frag.			burned	
005-0047	Testudines	1/8	20	indet. carapace/plastron frag.				
005-0047	Testudines	1/8	1	limb bone	articular process & shaft			
005-0047	Testudines	1/8	1	limb bone	articular process frag.			
005-0047	Testudines	1/8	2	vertebra	frag.			
005-0048	Testudines	1/8	2	indet. carapace/plastron frag.			burned	
005-0096	Vertebrata	1/16	1	indet. frag.			calcined	
005-0096	Vertebrata	1/16	36	indet. frag.			burned	
005-0096	Vertebrata	1/16	2427	indet. frag.				
005-0073	Vertebrata	1/8	162	indet. frag.				
005-0075	Vertebrata	1/8	5	indet. frag.			burned	
Note: abbreviations: indet. (indeterminate), frag. (fragment). Identification of portion and side (of paired elements) was not attempted on every element.								

Appendix E. Specimens Identified: Taylor Fish Camp (9GN12) Donor Board-2, Midden Deposits (FS 21A).

CAT# 18A-	Taxon	Screen Size (in)	NISP	Element	Portion	Side	Modifications	Remarks
021-0026	Actinopterygii	1/16	1	indet. frag.			calcined	
021-0026	Actinopterygii	1/16	2	indet. frag.			burned	
021-0026	Actinopterygii	1/16	427	indet. frag.				
021-0026	Actinopterygii	1/16	63	indet. spine/ray	frag.			may include rib and pterygiophore frag.
021-0026	Actinopterygii	1/16	1	indet. spine/ray	frag.		burned	
021-0026	Actinopterygii	1/16	1	indet. spine/ray	frag.		calcined	
021-0026	Actinopterygii	1/16	1	pterygiophore	distal & shaft			probably Sciaenidae
021-0026	Actinopterygii	1/16	1	pterygiophore	frag.			
021-0026	Actinopterygii	1/16	1	rib	frag.			
021-0026	Actinopterygii	1/16	1	vertebra	centrum		burned	
021-0026	Actinopterygii	1/16	1	vertebra	centrum		calcined	
021-0026	Actinopterygii	1/16	24	vertebra	centrum			many are probably Sciaenidae
021-0026	Actinopterygii	1/16	30	vertebra	centrum frag.			
021-0004	Actinopterygii	1/4	3	indet. frag.				
021-0012	Actinopterygii	1/8	3	caudal vertebra	mostly whole			probably Sciaenidae
021-0012	Actinopterygii	1/8	67	indet. frag.				
021-0012	Actinopterygii	1/8	4	indet. spine/ray	frag.			
021-0012	Actinopterygii	1/8	3	vertebra	centrum frag.			
021-0002	Ariidae	1/4	1	caudal vertebra	centrum			*A. felis* or *B. marinus*
021-0002	Ariidae	1/4	1	ceratohyal	anterior	left		*A. felis* or *B. marinus*
021-0002	Ariidae	1/4	1	cleithrum	central	left		*A. felis* or *B. marinus*
021-0002	Ariidae	1/4	1	otolith (lapillus)	mostly whole	left		*A. felis* or *B. marinus*
021-0009	Ariidae	1/8	24	caudal vertebra	mostly whole			*A. felis* or *B. marinus*
021-0009	Ariidae	1/8	2	ceratohyal	posterior	right		*A. felis or B. marinus.* MNI=2
021-0009	Ariidae	1/8	1	otolith (lapillus)	mostly whole	right		*A. felis* or *B. marinus*
021-0009	Ariidae	1/8	1	spine	shaft			*A. felis* or *B. marinus*
021-0009	Ariidae	1/8	3	vertebra	centrum frag.			*A. felis* or *B. marinus*
021-0005	*Ariopsis felis*	1/4	1	quadrate	mostly whole	right		
021-0003	*Bagre marinus*	1/4	1	frontal	anterior	left		
021-0003	*Bagre marinus*	1/4	1	frontal	anterior	right		
021-0003	*Bagre marinus*	1/4	6	neurocranium frag.				
021-0003	*Bagre marinus*	1/4	1	posttemporosupracleithrum	anterior, medial	left		
021-0003	*Bagre marinus*	1/4	1	quadrate	mostly whole	right		
021-0010	*Bagre marinus*	1/8	12	neurocranium frag.				
021-0033	cf. *Micropogonias undulatus*	1/16	3	haemal spine	mostly whole			cross mend, new break. Close match to *M. undulatus* but similar to *S. lanceolatus*
021-0028	cf. *Mugil* sp.	1/16	2	atlas	centrum			cross-mend, new break
021-0028	cf. *Mugil* sp.	1/16	8	basioccipital	posterior			5 pieces cross mend, new break. MNI=3
021-0028	cf. *Mugil* sp.	1/16	2	dorsal spine	proximal & shaft			
021-0028	cf. *Mugil* sp.	1/16	1	indet. element	mostly whole	left		paired element, possibly a preorbital
021-0028	cf. *Mugil* sp.	1/16	1	indet. element	mostly whole	right		paired element, possibly a preorbital
021-0028	cf. *Mugil* sp.	1/16	1	operculum	articular process	left		
021-0028	cf. *Mugil* sp.	1/16	2	otolith (sagitta)	whole	left		
021-0028	cf. *Mugil* sp.	1/16	8	precaudal vertebra	centrum			
021-0028	cf. *Mugil* sp.	1/16	1	quadrate	articular process	left		
021-0028	cf. *Mugil* sp.	1/16	1	ultimate vertebra	anterior			
021-0011	cf. *Mugil* sp.	1/8	3	precaudal vertebra	centrum			
021-0011	cf. *Mugil* sp.	1/8	1	vertebra	centrum			
021-0013	Cirripedia	1/8	1	plate	frag.		burned	identification not attempted beyond class
021-0027	Clupeidae	1/16	1	ultimate vertebra	mostly whole			
021-0027	Clupeidae	1/16	3	vertebra	centrum			
021-0008	*Crassostrea virginica*	1/4	1	indet. shell frag.				
021-0030	*Cynoscion* sp.	1/16	1	vertebra	centrum frag.			
021-0029	Fundulidae	1/16	1	hyomandibular	mostly whole	left		
021-0029	Fundulidae	1/16	1	lower phayngeal plate	frag.			
021-0029	Fundulidae	1/16	1	operculum	artic. process	left		
021-0029	Fundulidae	1/16	6	vertebra	centrum			
021-0007	*Geukensia demissa*	1/4	29	indet. shell frag.				
021-0014	*Geukensia demissa*	1/8	51	indet. shell frag.				
021-0017	*Mercenaria mercenaria*	1/8	1	indet. shell frag.				
021-0021	Mollusca	1/16		indet. shell frag.				
021-0016	Mollusca	1/8	43	indet. shell frag.				
021-0031	Pleuronectiformes	1/16	1	vertebra	centrum frag.			probably Paralichthyidae but cannot rule out Bothidae
021-0032	Sciaenidae	1/16	1	dorsal spine	proximal & shaft			very similar to *M. undulatus* but cannot rule out other drums
021-0032	Sciaenidae	1/16	3	pelvic/anal spine	proximal & shaft			
021-0032	Sciaenidae	1/16	1	pharyngeal plate	frag.			
021-0032	Sciaenidae	1/16	1	pterygiophore	distal & shaft			
021-0032	Sciaenidae	1/16	1	scapula	mostly whole			
021-0020	Sciaenidae	1/8	1	ultimate vertebra	centrum			
021-0034	*Stellifer lanceolatus*	1/16	1	upper pharyngeal plate	mostly whole			
021-0019	*Stellifer lanceolatus*	1/8	1	otolith (lapillus)	mostly whole	right		
021-0023	Stylommatophora	1/16	1	shell	mostly whole			
021-0006	*Tagelus plebius*	1/4	12	indet. shell frag.				
021-0015	*Tagelus plebius*	1/8	8	indet. shell frag.				
021-0025	Vertebrata	1/16	63	indet. frag.				
021-0025	Vertebrata	1/16	1	indet. frag.			burned	
021-0025	Vertebrata	1/16	1	indet. frag.			calcined	
021-0018	Vertebrata	1/8	11	indet. frag.				

Note: abbreviations: indet. (indeterminate), frag. (fragment). Identification of portion and side (of paired elements) was not attempted on every element.

Appendix F. Specimens Identified: Taylor Fish Camp (9GN12) Donor Board-1, Midden Deposit (FS 21/Feature 01), 1/4-in Screens.

CAT# 14G-	Faunal #	Taxon	NISP	Element	Portion	Side	Fusion/Age Data	Modifications	Remarks
021-0005	ZC-63	Actinopterygii	37	caudal vertebra	mostly whole/centrum frag.				
021-0005	ZC-64	Actinopterygii	9	precaudal vertebra	mostly whole/centrum frag.				
021-0005	ZC-65	Actinopterygii	31	vertebra	centrum frag.				
021-0005	ZC-99	Actinopterygii	52	rays/spines	frag.				may include ribs and pterygiophore frags.
021-0005	ZC-100	Actinopterygii	1	gill raker					
021-0005	ZC-102	Actinopterygii	142	indet. frag.					Many are likely Ariidae
021-0005	ZC-01	Ariidae	1	ceratohyal	posterior/central	right			*A. felis* or *B. marinus*
021-0005	ZC-11	Ariidae	2	hyomandibular	central/ posterior				
021-0005	ZC-13	Ariidae	1	prootic	central frag.	left			*A. felis* or *B. marinus*
021-0005	ZC-14	Ariidae	4	basioccipital	posterior/ventral				*A. felis* or *B. marinus*
021-0005	ZC-15	Ariidae	3	weberian apparatus	centrum/frag.				*A. felis* or *B. marinus*
021-0005	ZC-18	Ariidae	3	coracoid	central	right			*A. felis or B. marinus* ; 2 pieces cross-mend, new break
021-0005	ZC-19	Ariidae	1	quadrate	anterior	right			*A. felis* or *B. marinus*
021-0005	ZC-22	Ariidae	8	pterygiophore	proximal				
021-0005	ZC-24	Ariidae	1	coracoid	lateral	left			*A. felis* or *B. marinus*
021-0005	ZC-27	Ariidae	1	prootic	central	right			*A. felis* or *B. marinus*
021-0005	ZC-29	Ariidae	3	epihyal	posterior/central	left			*A. felis* or *B. marinus*
021-0005	ZC-30	Ariidae	2	epihyal	central	right			*A. felis* or *B. marinus*
021-0005	ZC-31	Ariidae	3	ceratohyal	anterior/central	right			*A. felis* or *B. marinus*
021-0005	ZC-32	Ariidae	1	ceratohyal	mostly whole	left			*A. felis* or *B. marinus*
021-0005	ZC-33	Ariidae	1	ceratohyal	anterior	left			*A. felis* or *B. marinus*
021-0005	ZC-34	Ariidae	1	hypohyal	mostly whole	right			*A. felis* or *B. marinus*
021-0005	ZC-35	Ariidae	1	hypohyal	mostly whole	left			*A. felis* or *B. marinus*
021-0005	ZC-36	Ariidae	3	dentary	central	left			*A. felis* or *B. marinus* ; 2 pieces cross-mend, new break
021-0005	ZC-37	Ariidae	1	dentary	posterior	left			*A. felis* or *B. marinus*
021-0005	ZC-38	Ariidae	3	dentary	posterior	right			*A. felis* or *B. marinus*
021-0005	ZC-39	Ariidae	3	dentary	central	right			*A. felis* or *B. marinus*
021-0005	ZC-04	Ariidae	1	operculum	dorsal	right			*A. felis* or *B. marinus*
021-0005	ZC-43	Ariidae	1	pectoral spine	shaft/portion of proximal	right			*A. felis* or *B. marinus*
021-0005	ZC-44	Ariidae	3	pectoral spine	proximal				*A. felis* or *B. marinus*
021-0005	ZC-45	Ariidae	3	pectoral/dorsal spine	central				*A. felis* or *B. marinus*
021-0005	ZC-52	Ariidae	3	cleithrum	posterior	right			*A. felis* or *B. marinus* ; 3 pieces cross-mend, new breaks
021-0005	ZC-60	Ariidae	5	otolith	whole	left			*A. felis* or *B. marinus*
021-0005	ZC-61	Ariidae	8	otolith	whole	right			*A. felis* or *B. marinus*
021-0005	ZC-82	Ariidae	75	precaudal vertebra	mostly whole				*A. felis* or *B. marinus;* Some are centrum frags
021-0005	ZC-83	Ariidae	146	caudal vertebra	mostly whole				*A. felis* or *B. marinus;* Some are centrum frags
021-0005	ZC-88	Ariidae	1	articular	central	left			*A. felis* or *B. marinus*
021-0005	ZC-89	Ariidae	1	articular	central	right			*A. felis* or *B. marinus*
021-0005	ZC-09	Ariidae	2	quadrate	anterior	left			*A. felis* or *B. marinus*
021-0005	ZC-90	Ariidae	1	premaxilla	anterior	right			*A. felis* or *B. marinus*
021-0005	ZC-91	Ariidae	1	palatine tooth plate	central	right			*A. felis* or *B. marinus*
021-0005	ZC-92	Ariidae	1	palatine tooth plate	central	left			*A. felis* or *B. marinus*
021-0005	ZC-98	Ariidae	1	cleithrum	posterior	left			*A. felis* or *B. marinus*
021-0005	ZC-81	Ariidae	1	weberian apparatus	anterior				
021-0005	ZC-10	*Ariopsis felis*	8	indet. neurocranium frag.					identification based on texturing
021-0005	ZC-16	*Ariopsis felis*	3	ethmoid cornu	mostly whole				MNI=3
021-0005	ZC-28	*Ariopsis felis*	2	lateral ethmoid	lateral/posterior shaft	left			
021-0005	ZC-46	*Ariopsis felis*	1	pectoral spine	mostly whole	left			
021-0005	ZC-05	*Ariopsis felis*	1	coracoid	medial/central	right			
021-0005	ZC-57	*Ariopsis felis*	2	cleithrum	posterior	left			
021-0005	ZC-08	*Ariopsis felis*	2	weberian apparatus	ventral				one specimen includes entire vertebral centra
021-0005	ZC-12	*Bagre marinus*	1	sphenotic	central	left			includes small posterior portion of frontal
021-0005	ZC-17	*Bagre marinus*	1	ethmoid cornu	lateral/right				
021-0005	ZC-02	*Bagre marinus*	5	frontal	anterior/central	right			
021-0005	ZC-20	*Bagre marinus*	1	coracoid	central	left			
021-0005	ZC-21	*Bagre marinus*	1	quadrate	anterior	left			
021-0005	ZC-23	*Bagre marinus*	1	vomer	anterior				
021-0005	ZC-25	*Bagre marinus*	1	parasphenoid	central				
021-0005	ZC-26	*Bagre marinus*	2	supraoccipital process	ventral				
021-0005	ZC-03	*Bagre marinus*	5	frontal	anterior/central	left			2 pieces cross-mend, old break
021-0005	ZC-40	*Bagre marinus*	1	articular	posterior	left			
021-0005	ZC-41	*Bagre marinus*	4	dentary	central	right			
021-0005	ZC-42	*Bagre marinus*	3	articular	posterior	right			
021-0005	ZC-47	*Bagre marinus*	2	pectoral spine	proximal/shaft	right			
021-0005	ZC-48	*Bagre marinus*	2	pectoral spine	proximal	left			
021-0005	ZC-49	*Bagre marinus*	2	pectoral/dorsal spine	distal				
021-0005	ZC-50	*Bagre marinus*	7	pectoral/dorsal spine	shaft				
021-0005	ZC-51	*Bagre marinus*	1	dorsal spine	mostly whole				
021-0005	ZC-53	*Bagre marinus*	1	cleithrum	posterior	left			
021-0005	ZC-06	*Bagre marinus*	1	sphenotic	mostly whole	right			includes small posterior portion of frontal
021-0005	ZC-66	*Bagre marinus*	131	neurocranium	frag.				identification based on texturing; many specimens are possibly identifiable to element
021-0005	ZC-07	*Bagre marinus*	7	weberian apparatus	ventral/anterior				MNI=6
021-0005	ZC-87	*Bagre marinus*	1	dentary	anterior	left			medium/large individual

Appendix F. Specimens Identified: Taylor Fish Camp (9GN12) Donor Board-1, Midden Deposit (FS 21/Feature 01), 1/4-in Screens.

CAT# 14G-	Faunal #	Taxon	NISP	Element	Portion	Side	Fusion/Age Data	Modifications	Remarks
021-0005	ZC-93	*Bagre marinus*	1	cleithrum	central	right			
021-0005	ZC-94	*Bagre marinus*	1	cleithrum	posterior	right			
021-0005	ZC-95	*Bagre marinus*	1	urohyal	anterior				
021-0005	ZC-96	*Bagre marinus*	1	pterygiophore 1	articular process				
021-0005	ZC-97	*Bagre marinus*	1	ossified Baudelot's ligament	ventral process	right			
021-0005	ZC-84	cf. *Archosargus probatocephalus*	2	caudal vertebra	mostly whole				could rule out *Lagodon rhomboides* based on size but need to compare with other Sparidae
021-0005	ZC-54	cf. *Mugil* sp.	1	basioccipital	mostly whole				
021-0005	ZC-86	cf. *Mugil* sp.	4	caudal vertebra	mostly whole				
021-0005	ZC-69	*Chelydra serpentina*	1	vertebra	centrum				
021-0005	ZC-85	*Cynoscion* sp.	4	caudal vertebra	mostly whole				
021-0005	ZC-58	*Didelphis virginiana*	1	mandible	central	right		rodent knawing	includes 3rd lower pre-molar; 2 pieces cross-mend, new break
021-0005	ZC-74	Emydidae	1	peripheral	lateral				
021-0005	ZC-77	Emydidae	1	indet. carapace frag.					probably *M. terrapin* based on carapace pattern/texturing
021-0005	ZC-101	Emydidae	1	vertebra	anterior			burned	
021-0005	ZC-68	*Malaclemys terrapin*	1	costal 1	medial	left			
021-0005	ZC-70	*Malaclemys terrapin*	1	peripheral 3	mostly whole	left			
021-0005	ZC-71	*Malaclemys terrapin*	1	peripheral 7	posterior frag.	left			could be right 3 peripheral
021-0005	ZC-72	*Malaclemys terrapin*	1	costal 8	medial frag.	left			
021-0005	ZC-73	*Malaclemys terrapin*	3	indet. carapace frag.					ID based on carapace pattern/texturing
021-0005	ZC-75	*Malaclemys terrapin*	1	peripheral 3	mostly whole	right			could be left 7 peripheral
021-0005	ZC-56	Pleuronectiformes	1	premaxilla	central/anterior	right			used photos from Florida Museum of Natural History's website to aid identification
021-0005	ZC-59	*Procyon lotor*	1	2nd phalanx	whole		proximal end fused		
021-0005	ZC-62	Sciaenidae	3	dorsal spine	proximal/shaft				most similar to *Cynoscion nebulosus* and *Micropogonias undulatus*
021-0005	ZC-55	*Sciaenops ocellatus*	1	vomer	anterior				3 pieces cross-mend, new breaks
021-0005	ZC-67	Testudines	1	limb bone	mostly whole	unidentified			simlar to *Deirochelys reticularia* and *Chelydra serpentina* radius/tibia but cannot rule out other taxa
021-0005	ZC-76	Testudines	5	indet. carapace/plastron frag.				burned	
021-0005	ZC-78	Testudines	8	indet. carapace/plastron frag.					
021-0005	ZC-79	Vertebrata	2	indet. frag.				burned	
021-0005	ZC-80	Vertebrata	18	indet. frag.					

Note: abbreviations: indet. (indeterminate), frag. (fragment)

Appendix G. Specimens Identified: Taylor Fish Camp (9GN12), Restroom Facility, Pit Feature 07A (FS 26), 1/4-in Screens.							
CAT# 16A-	**Taxon**	**NISP**	**Element**	**Portion**	**Side**	**Modifications**	**Remarks**
026-0052	*Bagre marinus*	3	neurocranium	frag.			
026-0053	cf. *Archosargus probatocephalus*	1	premaxilla	anterior	right		
026-0053	cf. *Archosargus probatocephalus*	4	preoperculum	central/mostly whole	left		all specimens cross-mend, old breaks
026-0053	cf. *Archosargus probatocephalus*	1	maxilla	posterior	right		large individual
026-0057	Mammalia	20	indet. frag.				Most are likely from the deer tibia (CAT#16A-026-0051), fragmented during/after excavation
026-0051	*Odocoileus virginianus*	12	tibia	proximal, shaft	left	fused	all specimens cross-mend, old and new breaks
026-0054	Pleuronectiformes	1	vertebra	centrum			probably Paralichthyidae but cannot rule out Bothidae
026-0055	*Procyon lotor*	5	mandible	mostly whole	right		all specimens cross-mend (includes 3 loose teeth), new breaks
026-0055	*Procyon lotor*	5	mandible	mostly whole	left		all specimens cross-mend (includes 3 loose teeth), new breaks
026-0055	*Procyon lotor*	3	maxilla	posterior	left		includes 4 teeth, 2 are loose
026-0056	Vertebrata	43	indet. frag				all are likely fragmented from other specimens in this provenience, many are new breaks
Note: abbreviations: indet. (indeterminate), frag. (fragment)							